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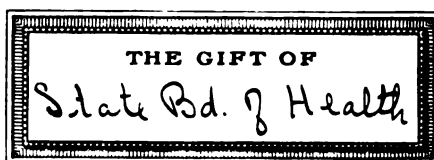
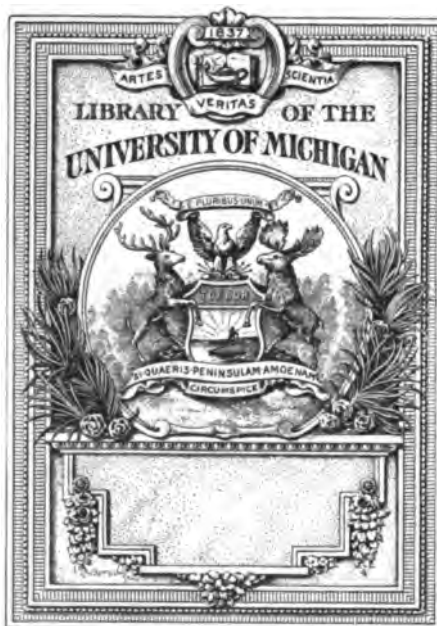
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FOURTH BIENNIAL REPORT

OR THE

Twenty-third and Twenty-fourth Annual Reports,

OF THE

STATE BOARD OF HEALTH

OF THE

STATE OF KANSAS,

FROM

January 1, 1907, to December 31, 1908.



STATE PRINTING OFFICE,
TOPEKA, 1909.

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| | |
|-------------------------------------------------------------------|--------------|
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J. T. WILLARD, M. S., Agricultural College, Manhattan, Food Analyst.
L. E. SAYRE, Ph. M., State Univ., Lawrence, Director of Drug Analysis.
SARA E. GREENFIELD, M. D., Topeka, Bacteriologist.
W. J. V. DEACON, Topeka, Statistician.

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On Water Supplies and Sewage.—Doctors CARVER, LOCKE and BENTLEY, Mr. WELCH and Professor MARVIN.
On Embalmers, Barbers, and Epidemic Diseases.—Doctors CARLILE, COBURN, CRUMBINE and GREENFIELD.
On Adulterated Foods, Drugs, and Drinks.—Mr. WELCH, Professor BAILEY, Professor SAYRE, Professor WILLARD, Mr. DEACON, and Doctor CRUMBINE.
On Finance.—The President.

LETTER OF TRANSMITTAL.

OFFICE OF SECRETARY OF STATE BOARD OF HEALTH,
TOPEKA, KAN., January 31, 1909.

To His Excellency, W. R. Stubbs, Governor:

SIR—In compliance with the laws of this state, I have the honor to herewith submit to you the third biennial report, or the twenty-third and twenty-fourth annual reports consolidated, of the Kansas State Board of Health, for the years 1907 and 1908.

Very respectfully,

S. J. CRUMBINE, M. D., *Secretary.*

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SECRETARY'S REPORT.

TOPEKA, KAN., January 31, 1909.

To His Excellency, W. R. Stubbs, Governor:

SIR—In accordance with that provision of the statute which requires the secretary of the State Board of Health to make biennial reports to you upon the vital statistics and sanitary conditions and prospects of the state, this fourth biennial report, including the twenty-third and twenty-fourth annual reports, is herewith respectfully submitted.

The general health conditions of the state are similar to those of past years. There have been no unusual epidemics, and the death rate is practically the same as it has been in the past few years. There is, however, a growing mortality from a disease not generally considered to be an epidemic disease, yet which registers such enormous morbidity and mortality figures as to be properly classed among epidemic diseases, and which should excite our apprehension for the future of our citizenship. I refer to the great scourge of mankind, tuberculosis. From reports received at this office from health officers and assessors it appears that there were somewhere between 1200 and 1500 deaths from tuberculosis in 1907, the actual number reported by health officers being 995. Due to our inefficient and cumbersome system of collection of vital statistics, it is clearly apparent that several hundred deaths from this disease have never been recorded, and thus it is safe to assume, based upon the reports actually received, that our death rate is as above indicated. In arriving at the number of cases of tuberculosis existing in a given population, sanitarians have placed several figures for such computation, running all the way from four to ten. That is to say, there are from four to ten cases existing for every death that occurs during the year. Using, then, the lowest figure that is given by experts in the computation of the number of cases existing in Kansas at the present time, we have four times 1500, or 6000. I believe that this is a moderate estimate and entirely within the bounds of the actual facts.

A careful review of the death rate from tuberculosis in the United States, as compiled by the Bureau of Census, United States Department of Commerce and Labor, indicates that 138,000 people died of tuberculosis in the United States last year, and that if the present death rate continues throughout the United States over five million of the people now living are doomed to die of this devastating disease. Using the same system of computation, based upon the Kansas mortality, we

arrive at the awful conclusion that of the present generation living in Kansas over 50,000 of our citizens are doomed to die of tuberculosis if the present conditions continue. These figures are appalling and overwhelming, and are the most eloquent and pitiable appeal that one can make for the urgent necessity of our prosperous and magnanimous state to take some immediate action looking towards the control and suppression of tuberculosis.

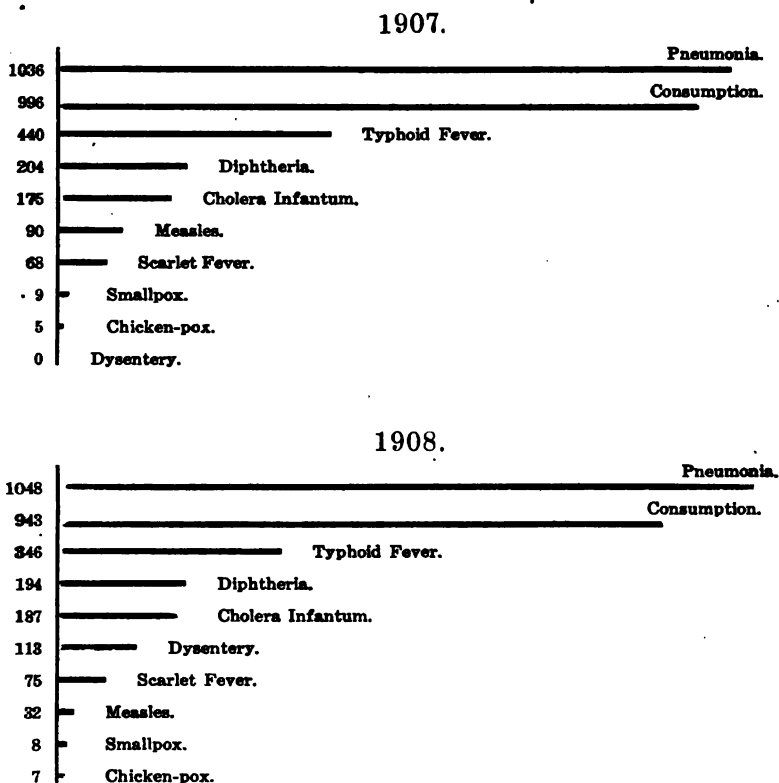
People generally are much agitated and concerned when an epidemic of smallpox appears, and enormous sums of money are expended annually in this state by municipalities and counties for the suppression of this disease, but when the mortality is compared with that of tuberculosis it is so insignificant as to be unworthy of comparison; the number of deaths from smallpox as reported to this office for the past three years being sixteen, twenty-seven and nine, respectively.

It is quite generally agreed by all authorities that the tuberculosis problem is a sociological and industrial one before it is a medical one, and its final solution must rest primarily upon a change in our sociological conditions, which change can only be brought about by a state-wide educational campaign. The establishment of sanatoria for the treatment and cure of cases will have little effect upon the on-coming army of the infected, and will never in the world solve the problem itself. We must endeavor to educate the people how to live; to teach them the value of fresh air and cleanliness, proper housing and sanitation; how they may avoid infection, and the tubercular patient how he may avoid infecting others. These fundamental principles should be taught through our splendidly organized school system and other educational institutions, and also by the assemblage of a state exhibit on tuberculosis, which should be taken from town to town all over our state, showing and illustrating to people the cause and the methods of the spread of tuberculosis, and how it may be avoided and cured. Thus we may accomplish something towards the prevention of this great disease.

To this end I would urgently recommend that the legislature appropriate a sum of not less than \$10,000 annually to the State Board of Health for the express purpose of carrying on an educational campaign along these lines, this money to be expended in such ways and means as the State Board of Health may direct. While I believe that a state institution for the treatment and cure of incipient cases and a hospital for the care of advanced cases is a part of the necessary machinery towards the final control of this disease, yet it is not the most essential one. Moreover, I fear that the legislature will be unwilling to appropriate a sufficient sum for an institution of this kind to adequately meet the demands of the situation. It would in my judgment be little better than nothing at all if they would give us a sum of less than \$100,000, and it ought to

be twice that amount in order to come anywhere near meeting the exigencies of the case. The danger of a less amount is in this, that the legislature may feel, and the average layman will be inclined to feel, that now a small institution is provided the whole question has been solved, when as a matter of fact the question has been but merely touched upon, and at the curative end of the problem, which after all is the small end.

The following comparative table of infectious and contagious diseases for the years 1907 and 1908 will at a glance indicate the relative mortality of these diseases, and remind the reader also that consumption still leads the list of preventable diseases in the slaughter of our citizens:



In a comparison of the statement of 1907 and 1908 with 1906 will be noted an increase in the number of deaths from pneumonia, consumption and dysentery, but a decrease in typhoid, diphtheria and cholera infantum.

Only two counties in the state, viz., Clark and Decatur, reported no deaths from consumption for the two years, while there was an increase of 92 deaths reported over the state, an

increase of 5 per cent. Pneumonia shows a sharp increase for the two years, 2084 deaths, as against 1649 for the preceding two years, an increase of 435, or 26 per cent.

Following is the rate of mortality for 1907 per 100,000 population of the counties reporting for the following diseases: Pneumonia, 62.8; consumption, 60.3; cancer, 35.1; typhoid fever, 26.6; diphtheria, 12.3; cholera infantum, 10.6; measles, 5.4; scarlet fever, 4.1; smallpox, 0.6. For 1908: Pneumonia, 63.5; consumption, 57.1; cancer, 33.4; typhoid fever, 20.9; diphtheria, 11.7; cholera infantum, 11.3; dysentery, 6.8; measles, 1.9; scarlet fever, 4.5; smallpox, 0.4.

There were reported in 1907 921 deaths due to external violence, of which 120 were suicide. The methods employed for self-destruction were as follows: Poison, 46; asphyxia, 4; hanging, 13; drowning, 3; firearms, 28; cutting, 3; jumping, 1; other forms of suicide, 22. In 1908 there were reported 931 deaths due to external violence, of which 130 were suicide. Poison, shooting and hanging appear to have been the favorite methods employed for self-destruction. The various methods employed were as follows: Poison, 30; asphyxia, 10; hanging, 12; drowning, 8; firearms, 35; cutting, 5; crushing, 1; other methods, 29.

The railroads show more careful management, as but 126 deaths in 1907 and 85 deaths in 1908 were due to them, whereas there were 145 in 1906. Gunshot wounds were the cause of 75 deaths in 1907 and 100 deaths in 1908, both years less than in 1906, which was 105. Mining accidents caused 49 deaths in 1907 and 32 deaths in 1908, as against 40 in 1906. There were 39 homicides in 1907 and 22 in 1908, as against 35 in 1906.

In 1907 the ages were reported for 11,729 deaths, and of this number 1889 were less than one year old; 2895, or 24 per cent, were under five years; 3514, or 29 per cent, were under fifteen years; 6823, or 58 per cent, were under fifty years; 9301, or 79 per cent, were under seventy years; 2428, or 21 per cent, exceeded seventy years of age, while 6 reached the century or beyond, and 4906, or 41 per cent, were past fifty years of age. In 1908 practically the same figures apply, except that 16 reached beyond the century and two reached the age of 110 years or beyond.

Where occupations of deceased were reported in 1907 we find professional, 153; mechanics, inside work, 249, outside work, 239; office employees, 96; merchants, 162; farmers, 1856; housewives, 2397; agents, 25; laborers, 826; miners, 113; dressmakers, 84; railroad and street-railway employees, 84; servants, 151. In 1908 we find professional, 169; mechanics, inside work, 339, outside work, 266; bankers, 10; office employees, 97; contractors, 30; dressmakers, 21; farmers, 1742; housewives, 2373; agents, 75; laborers, 664; merchants, 148;

miners, 103; railroad and street-railway employees, 96; students, 281; servants, 64.

The death rate per 1000 population for 1907 was 7.9 and for 1908 was 7.7, an increase for the two years as compared with 1905 and 1906 of 0.3.

FOOD AND DRUGS LAW.

The food and drugs law has been in operation a year and a half, and I am glad to report that the dealers and jobbers generally are not only in hearty accord with the law but have made a reasonable effort to comply with its provisions. There is naturally a certain small per cent of dealers who, through neglect or indifference, or even willfully, have refused to comply with its provisions. Thus there have been recently quite a number of prosecutions filed in the courts for the recovery of penalties.

The following cases have been brought to a successful conclusion in the courts:

1907—November.

| | |
|------------------------------------------------|-------------------|
| C. L. Hess, Lawrence: Sulfites in meat..... | \$1 00 and costs. |
| Chas. Thudium, Lawrence: Sulfites in meat..... | 1 00 and costs. |
| J. H. Steadman, Chanute: Sulfites in meat..... | 10 00 and costs. |

1908—August.

| | |
|----------------------------------------------------------------|-------------------|
| J. F. Kerr, Kansas City: Substandard milk..... | \$1 00 and costs. |
| C. Roherbach, Kansas City: Substandard milk..... | 1 00 and costs. |
| H. L. Armentrout, Kansas City: Substandard milk... | 1 00 and costs. |
| John Scalpens, Kansas City: Substandard milk..... | 4 25 |
| James Garner, Kansas City: Substandard milk..... | 1 00 and costs. |
| George Frederick, Kansas City: Substandard milk... | 1 00 and costs. |
| J. B. Henry, Kansas City: Substandard milk..... | 1 00 and costs. |
| Chanery & Booth, Kansas City: Substandard milk.... | 1 00 and costs. |
| H. M. Taylor, Quindaro: Preservative in meat..... | 1 00 and costs. |
| B. A. Jackson, Quindaro: Preservative in meat..... | 1 00 and costs. |
| P. B. Diltz, Quindaro: Preservative in meat..... | 1 00 and costs. |
| Chas. F. McGregor, Junction City: Obstructing inspection. | 20 00 and costs. |

September.

| | |
|-----------------------------------------------------------------------|--------------------|
| F. D. Coryell, Junction City: Meats uncovered in transportation | \$20 00 and costs. |
| A. Bishheimer, Junction City: Meats uncovered in transportation | 10 00 and costs. |
| F. Claussen, Merriam: Substandard milk..... | 10 00 and costs. |
| Berry & Ritter, Topeka: Sidewalk display..... | 1 00 and costs. |
| E. W. Brewster Grocer Co., Leavenworth: Sidewalk display | 4 95 |
| Solomon Drug Co., Solomon: No label following display | 20 00 and costs. |
| Montezuma Hotel, Solomon: No label following display | 20 00 and costs. |
| Manuel & Chastain, Hutchinson: Sidewalk display.. | 10 00 and costs. |
| M. G. Thompson, Hutchinson: Misbranding cider.... | 10 00 and costs. |
| F. H. Drees, Kansas City: Sidewalk display..... | 5 00 and costs. |

October.

| | | |
|------------------------------------------------------------------------|---------|------------|
| Owl Restaurant, Olathe: Misbranding..... | \$13 50 | |
| G. D. Whitney & Son Drug Co., Olathe: No label following display | 13 50 | |
| C. T. Wilcox, Emporia: Misbranding..... | 5 00 | and costs. |
| A. C. Ireland, Emporia: Misbranding..... | 5 00 | and costs. |
| S. T. Wilson, Emporia: Misbranding..... | 5 00 | and costs. |
| E. A. Wilson, Emporia: Misbranding..... | 5 00 | and costs. |
| Fred Baird, Emporia: Misbranding..... | 5 00 | and costs. |
| J. H. Harvey, Emporia: Misbranding..... | 5 00 | and costs. |
| W. H. Brooks, Emporia: Misbranding..... | 5 00 | and costs. |
| H. R. Wickler, Emporia: Misbranding..... | 5 00 | and costs. |
| Taylor & Robinson, Kansas City: Sidewalk display... | — | |
| J. T. Romaine, Kansas City: Sidewalk display..... | — | |
| Jim Marra, Kansas City: Sidewalk display..... | — | |
| Star Bottling Co., Salina: Saccharine in pop..... | 5 00 | and costs. |
| Long & Hines, Cottonwood Falls: Selling rotten eggs, | 13 50 | |
| Charles Huffman, Strong City: Selling spoiled meat.. | 5 00 | and costs. |
| Paola Bottling Works, Paola: Saccharine in pop..... | — | |
| Winshropp & Hensen, Paola: Misbranding..... | — | |
| J. W. Sutton, Glasco: Unsanitary slaughterhouse.... | 5 00 | and costs. |
| J. J. Hendricks, Dunlap: Obstructing inspection..... | 25 00 | and costs. |
| W. C. Allen, Leavenworth: No label following display, | 4 95 | |
| A. F. Wood, Leavenworth: No label following display, | 6 95 | |
| Higgins Bros., Leavenworth: No label following display | 6 45 | |
| C. A. Green, Leavenworth: Milk adulteration..... | 4 95 | |
| J. Shilling, Paxico: Selling diseased meat..... | 50 00 | and costs. |
| Sam Shilling, Paxico: Selling diseased meat..... | 50 00 | and costs. |
| G. F. Shilling, Paxico: Selling diseased meat..... | 25 00 | and costs. |

November.

| | | |
|----------------------------------------------------------------------------|---------|------------|
| H. C. Lewis, Arlington: Meats uncovered in transportation | \$16 50 | and costs. |
| G. L. Ellsworth, Inman: Selling diseased meat..... | 27 45 | |
| H. S. & J. S. Schleifer, Lawrence: Meats uncovered in transportation | 10 00 | and costs. |
| Harry Kennedy, Kansas City: Obstructing inspection, | — | |
| Clarence Young, Topeka: Misbranding drugs..... | 50 00 | and costs. |
| F. M. Curtis, Topeka: Misbranding drugs..... | 25 00 | and costs. |
| J. W. Hollinger, Topeka: Misbranding drugs..... | 25 00 | and costs. |
| C. L. Tyler, Council Grove: Selling diseased meat.... | 300 00 | and costs. |
| G. C. Robinson, Topeka: Misbranding drugs..... | 50 00 | and costs. |
| Robertson & Harvey, Coffeyville: Use of preservatives in meat..... | 2 00 | and costs. |
| Wm. Wiedemann, Lawrence: Selling adulterated candy | 1 00 | and costs. |
| Henry Allendorff, Lawrence: Selling adulterated candy | 1 00 | and costs. |
| L. Zuttermeister, Lawrence: Selling adulterated candy | 1 00 | and costs. |
| John Coutrakon, Lawrence: Selling adulterated candy | 1 00 | and costs. |
| James Limperakis, Lawrence: Selling adulterated candy | 1 00 | and costs. |

December.

| | | |
|----------------------------------------------------------|---------|------------|
| A. Ball, Greenleaf, farmer: Selling rotten eggs..... | \$18 00 | |
| W. R. Moore & Burge, Fort Scott: Substandard cream | 2 00 | and costs. |
| C. L. Day, Arcadia: Misbranding vinegar..... | 13 80 | |
| E. Majors, Arcadia: Misbranding malt liquor..... | 9 55 | |
| Barry Janes, Girard: Misbranding..... | 9 00 | |
| G. P. Pierce, Topeka: Misbranding drugs..... | 25 00 | |
| D. R. Osborne, Topeka: Deteriorated drugs..... | 25 00 | |
| A. H. Ott, Topeka: Misbranding drugs..... | 5 00 | |
| C. W. Meade, Topeka: Misbranding drugs..... | 25 00 | |

The year and a half has also indicated to the department that there are several places in the law which need strengthening, and we wish to present a bill for amending the law in those particulars. One of the weak places is that we are not provided with a sufficient number of inspectors. There are approximately 10,000 places of various kinds that are subject to inspection under the law, and with but four inspectors to do this work it is self-evident that they cannot cover the state as often as they should during the year. Indeed, all of the drug stores have not yet been inspected, and I suspect that two years will have elapsed before they are entirely covered by our one drug inspector. Our force should be increased to at least ten inspectors. I believe also that the salary should be increased to \$125 a month, in order that it may attract the best men we can find to do this work, which is necessarily more or less technical and requires expert skill in its performance.

Particular attention is also called to the weights-and-measures laws on the statute books, which should be revised to be both reasonable and just to the dealer as well as the consuming public.

We believe that the legislature can well afford to treat this department of the Board's work with great liberality, for I believe I am safely within the limits of truth when I say it is my opinion that since the passage of the food and drugs law we have been able to save the people of Kansas close to a million of dollars, by eliminating adulterations, frauds and fraudulent practices, short weights, etc. Take for illustration a single item, and that in the case of oysters. We early took numerous samples of oysters found upon the market under the old way of refrigerating these toothsome products by keeping a chunk of ice in the container with the oysters, and which when melted was sold to the consumer as oyster juice at fifty cents a quart. Analysis of the amount of water found in these oysters was used as a basis of computation on the amount sold in the state annually, and this saving amounted to something over \$100,000. Professor Willard, our analyst, is of the opinion that this estimate is too small. If, then, we have saved the consumers of this state such a sum on a single item, what can be said of the saving on many other articles which hitherto have been so basely adulterated and sophisticated. When we began

our campaign on short weights last spring, taking up the case of flour, we found in many instances a shortage ranging from one-half to three pounds on a sack of flour. One of our inspectors was so fortunate as to be able to weigh a car of flour just about to be unloaded, and which had been freshly packed but a few days before. This car was found to be short 560 pounds. I believe, therefore, that additional funds appropriated for this department to adequately carry out the provisions of the law will be returned a hundredfold to the consumers of this state.

One of the most beneficial portions of the law is that relating to the sanitation of places and things where foods, drugs and drinks are prepared, sold or offered for sale. This has been accomplished largely through regulations made by the State Board of Health. Thus the sidewalk display of perishable food products has been abolished, and the fly excluded as nearly as possible from places where foods are prepared or sold. Slaughterhouses, meat markets, bakeries, and hotel and restaurant kitchens have as a rule been the greatest offenders of the laws of sanitation, and a radical change has been instituted in many of these places. About thirty new slaughterhouses have been built as the result of condemnation of old, filthy, unsanitary places, and there are others to follow.

WATER AND SEWAGE LAW.

Next in importance to the food and drugs law passed by the legislature of 1907 was the water and sewage law, which provides that all new water supplies or sewerage systems that are built or operated in this state shall first receive the approval of the State Board of Health. The wisdom of a law of this kind is self-evident, and the department has been of real service to many of the municipalities of the state in helping them to secure a wholesome water supply and in preventing the installation of inefficient systems, which might have been installed without this supervision. We have also aided materially in the matter of saving the natural watercourses of this state from further pollution.

However, the law is weak in three particulars: First, it does not give the Board supervision over the municipal or private water supplies and sewerage systems that were installed previous to the passage of the act. It does not provide the Board with an official engineer, and makes no provision in the way of funds for its enforcement. We desire to ask the legislature for an amendment along these lines. It is only necessary to call your attention to the condition of the Lawrence water supply during the past year to remind you of how important it is that the Board have some authoritative control in these matters, to this extent, at least, that where they find after examination that the water supply of a municipality is unwholesome they may by written order notify such municipality or company to make

such changes in their operation or source of supply as will insure the people a safe and wholesome water for domestic purposes. The amendment which we propose carries with it the provision that a municipality or company that believes the order of the Board to be unreasonable may appeal to the judge of the district court, who, after hearing both sides of the question, may affirm or modify or disapprove such order, as the facts seem to warrant. We need an appropriation of at least \$2500 annually to carry into effect the provisions of this law, particularly for the purpose of investigating the matter of industrial wastes that are polluting many of the streams of this state. Original investigations may be made along this line in order to advise manufacturers and mine owners, smelters and oil refiners, how they may properly dispose of their waste by treatment before discharge into the natural waters of the state. Many of the streams of the state are so basely polluted as to have killed all the fish therein, and indeed in some instances the water has become unfit for stock purposes, and thus actual damage has been done to farmers and others living along the watercourses. This seems to me to be an especially important matter.

When we take into account the continuing number of typhoid cases and deaths in this state, the rapid increase of growth of many of our cities, together with the large number of new manufacturing plants going in yearly, the question of the preservation of the purity of our natural watercourses becomes an important problem, for there is a considerable population of our state whose only source of water supply is that of the rivers upon which the cities are located. The typhoid cases and mortality reported during the past three years have been as follows: 1905, 1728 cases with 397 deaths; 1906, 1731 cases with 368 deaths; 1907, 1958 cases with 436 deaths.

IN GENERAL.

The very basis of sanitary science necessarily rests on accurate vital statistics; for how may we know of the points of infection and be able to apply preventive measures without exact data, or in the attempt to apply preventive control how may we know that it is in any measure effective without accurate statistics? Thus it appears that any health measures or reform movements along the lines of sanitation must be greatly handicapped unless the central bureau may be furnished with exact, or reasonably exact, information. The department, therefore, proposes to introduce a vital statistics measure, which I trust may have your special commendation. This bill is the result of the work of the joint committee from the American Medical Association, the American Public Health Association, and the representatives of the Census Bureau of the Bureau of Commerce and Labor, and it is understood that this uniform bill will be introduced into all the states in the United States that

have not yet a measure which collects sufficiently accurate vital statistics to be included in what the Census Bureau denominates the "registration area," which now comprises only sixteen states.

In addition to this, we wish to ask for a measure making it compulsory to report all cases of tuberculosis to the city or county health officer, to be in turn sent to this department, for our tuberculosis campaign will be effective just to the extent that we may be able to locate the centers of infection, in order that measures of prevention may be put into operation to prevent further infection from the sick to the well, and to carry out measures of disinfection after the termination of the case.

Tuberculosis is essentially a house disease. It is so denominated by the Germans. A single classical instance will illustrate the point. Jacob Riis, one of a family of eleven, in his early life moved from his home in Denmark to this country, the remainder of the children all dying one after another from tuberculosis. It is likely that the only reason why Jacob Riis is living to-day is that he left his home, which was a hotbed of infection. After they had all died, the house was repapered, plastered and painted, and a general renovation made therein, since which time there have been no further cases of tuberculosis occurring. This is the story which he himself told at the International Congress on Tuberculosis, and clearly points out the necessity of the location of each case.

No doubt your attention has already been called by other departments to the wisdom of having separate pavilions for tubercular cases in the various state institutions. This is particularly important, I might say imperative, in the two hospitals for the insane and the State Penitentiary.

It has been the custom of this department, through its committee on state institutions, to make a sanitary inspection of the various charitable and reformatory institutions of the state at least annually. These inspections have disclosed quite a satisfactory sanitary condition, with but minor exceptions, such exceptions being entirely due to structural or mechanical defects and not to administrative detail.

In December, Governor Hoch appointed a committee of five to investigate certain conditions at the State Penitentiary, which investigation was for the purpose of determining whether or not certain charges made by the commissioner of charities and prisons of the state of Oklahoma were true. The secretary of this Board was honored by a membership on this committee, and after an exhaustive examination and investigation the committee made its report to Governor Hoch, which report is such an important contribution to prison investigation and prison reform that I herewith take the liberty of submitting it as a portion of my official report of the State Board of Health.

REPORT OF THE KANSAS COMMITTEE

APPOINTED BY GOV. E. W. HOCH TO INVESTIGATE THE CONDITIONS OF THE KANSAS STATE PENITENTIARY IN REGARD TO SANITATION, FOOD SUPPLY, METHODS OF PUNISHMENT, CARE AND GENERAL TREATMENT OF PRISONERS, AND METHODS OF ADMINISTRATION OF THE INSTITUTION, IN ANSWER TO CHARGES MADE BY MISS KATE BARNARD, COMMISSIONER OF CHARITIES AND PRISONS OF OKLAHOMA.

COMMITTEE.

HON. F. D. COBURN, Secretary of State Board of Agriculture, Topeka,
Chairman.

DR. S. J. CRUMBINE, Secretary State Board of Health, Topeka.

REV. CHAS. M. SHELDON, Topeka.

HON. FRANK GILDAY, State Mine Inspector, Pittsburg.

F. W. BLACKMAR, Professor of Sociology and Economics in the University of Kansas, Lawrence, *Secretary.*

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1. Charges of Miss Barnard, commissioner of charities and prisons, Oklahoma.
 2. Governor Hoch's instructions to the committee.
 3. Minutes of the committee.
 4. The report:
 - a. General statement.
 - b. Classification of prisoners.
 - c. The Oklahoma prisoners.
 - d. Punishment and discipline.
 - e. Sanitary conditions.
 - f. Kind and quality of food.
 - g. Condition of the mines.
 - h. Education.
 5. Recommendations:
 - a. Oklahoma prisoners.
 - b. Better hospital service.
 - c. Increased medical attendance.
 - d. Hospital for the criminal insane.
 - e. New tuberculosis pavilion.
 - f. Larger and better qualified administrative force.
 - g. Remove guardhouse from administration building.
 - h. Abolish contract system of labor.
 - i. Reduce output of mines and finally cease working them by prison labor.
 - j. Better library equipment and better school facilities.
 - k. Reduce the labor day to eight hours.
 - l. Enforce civil service rules.
 - m. Place Penitentiary and Reformatory under one board or else place them both under Board of Control.
 - n. Give the warden full appointing power under civil service rules, and hold him responsible for the entire management.
 - o. Reorganize the official roll, retaining competent men who are interested in reforming men as well as in controlling them.
 - p. Allow only one prisoner in each cell.
 6. Stenographic report of proceedings.

CHARGES BY MISS KATE BARNARD.

At the very beginning of her territorial government, Oklahoma territory entered into a contract with the state of Kansas to take care of her criminals. At that time crime was rampant in the territory and unsettled conditions attracted unusually large numbers of depraved and vicious men. Society, in order to protect itself against the depredations of these lawbreakers,

gave little heed to where its convicted criminals were kept, so long as they were got rid of. So it was that year after year went by without an effort being made to investigate or question how these convicts were treated, whether steps were taken to make the convict a better man, so that society would be protected by his reformation after he got out of prison, or whether he was punished merely for revenge. From time to time stories had drifted into Oklahoma regarding the Lansing prison, but nothing definite was known. Some said the institution is a relic of the "dark ages"—the system of management and discipline is based on the long since abandoned principle of revenge, not reformation. Others said the idea of the prison authorities is that a man must have his spirit broken—must be thoroughly cowed—before he can be considered a good prisoner.

I had talked with many of the released prisoners, and without exception they told tales of brutal guards, cruel punishments and inhuman treatment. I was inclined to doubt these tales—to believe them highly colored exaggerations; but a certain uniformity in the stories, giving names and dates, established a growing belief in their veracity and an anxiety to visit the prison. So, on the 17th of August, I appeared at the Lansing Penitentiary. My coming was not announced, and in company with the general crowd of visitors I paid the usual admittance fee and with them was shown through what the prisoners called the "show-places" of the prison. I did this to get my bearings. I returned to the office and presented my card, saying that my business at the prison was to make a thorough inspection. My request caused them the greatest surprise and consternation. The warden questioned my right to inspect the prison as an officer of the state of Oklahoma, but very courteously offered to show me over the institution as a private citizen. The board of directors happened to be in session that day and one of its members also challenged my right to go through the prison in my official capacity, because, as he said, the Penitentiary was a Kansas state institution and not in any way under the control of the state of Oklahoma. One of the members said, "I would like to know who commissioned you to come here to spy upon this institution." I replied that I was "commissioned by a million and a half Oklahoma citizens to investigate this Penitentiary. Either show me through as a state officer of Oklahoma, or order me out. I shall do my duty here unless I am forced from this institution." Warden Haskell said: "You have no business in this institution. If I wanted to I could order you out." But he did n't, and I proceeded to investigate. I spent several hours down in the mines; visited the punishment chambers; saw the "crib," which had been many times explained to me by released prisoners; saw the dungeons; saw where the "water cure" was administered, etc., and returned to Oklahoma, and on September 7 made a

written report to the governor containing substantially what I am now relating to you.

At first, when an Oklahoma prisoner was pointed out to me I tried to talk to him, but I was informed in no uncertain language that I was breaking the prison rules. I was so constantly thwarted in my efforts to speak to the Oklahoma prisoners that I told Warden Haskell most emphatically that I proposed to interview all the Oklahoma men. When he saw I was determined he reluctantly offered to allow me to speak to such as I would designate, in his private office. Luckily I had secured the names of several while I was in the mine, and these I called for. At 7:30 o'clock of that evening I went to the warden's office and found the prisoners were waiting outside. Although the warden knew that according to strict prison rules the prisoners must retire at nine o'clock, he engaged me in a lengthy, stormy conversation, again maintaining that I had no right to be on the premises and that it was only through courtesy that he was permitting me to converse with the prisoners. Finally he permitted one prisoner to be ushered in to me. I asked the warden to retire. I talked with the prisoner about three minutes, when the warden returned, and knowing that it was no use to interview the prisoner in the presence of the warden, I dismissed him. A second prisoner was admitted and Warden Haskell retired, leaving the door ajar. I spoke to the prisoner in a low tone and asked him to make a candid statement of how he and the other prisoners were treated. This did not suit the warden, and he reentered the room and ordered me to sit at a distance from the boy, thus compelling us to speak louder. He then retired, leaving the door ajar. In about three minutes he came in again, and for reasons above stated I dismissed the prisoner. After another lengthy dispute with the warden a third man was admitted. This seemed to be the limit of the warden's patience, for he said, "I refuse to permit you to speak to this prisoner alone." I asked the prisoner why the warden refused to let me interview him. The prisoner bravely faced the wrath of the warden by describing the "water cure" punishment, which had been administered to him only a short time before. This water cure is described later on. Warden Haskell acknowledged that under his personal supervision the prisoner had been thus punished. After this no other prisoners were admitted.

If great discourtesy was shown to me as an officer, no one could complain of the entertainment and kindness shown me as an individual by Warden and Mrs. Haskell. They told me the hotel facilities in Lansing were very bad, and invited me to stay as the guest of Mrs. Haskell, and I was glad to accept the hospitality offered. I wish to say here that it is the system in vogue at the Lansing Penitentiary which I most earnestly condemn, and not the officer. If a modern system and disci-

pline were followed I believe that Warden Haskell would make a good record. Under the utterly bad and obsolete system Warden Haskell has succeeded in installing a cold storage plant, which means much to the hospital and dietary department. I was told that he had organized a night school, which is held for two hours each night during the winter season. The sick convicts in the hospital are given very good care and treatment. The cell-rooms are quite clean and the light and ventilation fair. I hear a great deal of complaint with regard to the food, the prisoners complaining that they were hungry. The dinner which was served to the miners while I was in the mine consisted of two pieces of bologna sausage, three inches long, with all the prisoners wanted of plain bread and tomato and pea soup. This I do not believe sufficiently substantial to maintain the physical strength of a hard laboring man. Mining is very hard work; so is most of the work in a penitentiary, and a man needs a great deal of substantial food. In Leavenworth, which I visited later, and where 300 of our Oklahoma prisoners are kept, I found that the men, although they do not work underground and were under much more sanitary conditions, were fed nearly twice the amount of food. An official report gives the cost of feeding each prisoner as 10.9 cents per day. In the Wisconsin state prison it is 11.4 cents. The state of Oklahoma pays 40 cents a day for the maintenance of each convict kept in the Lansing Penitentiary. The state of Kansas furnishes the prison clothing, and a complete suit of wearing apparel to each prisoner, together with a few dollars, when discharged. This probably brings the total average cost of maintenance up to 48 cents per capita for each day. The United States Penitentiary at Leavenworth shows the average total cost of maintenance to be 55.9 cents.

Even at the average cost of 48 cents per day, the state of Kansas would find its contract with the state of Oklahoma a losing one, were it not for the fact that it furnishes cheap labor to contractors and operates mines and a binder-twine factory.

There were, at the time of my inspection, 562 men and 12 women prisoners from Oklahoma in the Lansing prison. I have no figures as to what profit their involuntary labor brings the state of Kansas. I have been told that some of the men are worked for 50 cents per day. Add to this the 40 cents paid by the state of Oklahoma, and it would make a net profit to Kansas of 48 cents per day for each Oklahoma convict. This ought certainly to enable the institution to give better food and still make a reasonable profit. Because I have not seen accurate figures this is only an estimate. The real figures may be a few cents higher or lower; but certain it is that I found a large number of the Oklahoma prisoners engaged in the very hardest kind of work.

MINES.

I spent the better part of Tuesday walking and creeping and crawling around in the inky depths of the prison coal mines. I passed through various places where the props and supporters of their roof were bent under the weight of the dirt ceiling, and in many places were so nearly broken in two that the wood was hanging together by mere shreds. I never passed any of these almost broken props without dreading a cave-in before I returned, and the farther down you go into the inky depths the narrower the passage is until, when you reach the face of the coal, you find the miners working in a twenty-two-inch vein of coal, lying flat on their back or side. I myself, as small as I am, had to get down and crawl through many of these passages, where, if the roof would give ever so little, a large man could never get out. One Oklahoma boy told me, with tear-streaming eyes, that he was frightened to death to work in this mine; that he had been called upon to pull three men out from under the falling slate in the past year. Another young man from Oklahoma told me that they put him in the mine the day he came; that he knew nothing about digging coal, and that two or three times he "set the gas off" and was constantly afraid of an explosion. One of the worst features of the mine is that the prisoners have what they call a "stunt," or in other words a certain day's work to perform. This work consists of mining three cars of coal a day. This law is inexorable as fate itself. Whatever happens, those three cars must come, and I found one little seventeen-year-old boy—from Oklahoma—locked up in a black dungeon shackled to a sprocket in the wall, because he was unable to extract from the inky depths those three cars of coal! He told me with tears in his eyes that he had gotten out a little over two cars of coal, but that he just could not get out any more; that the coal was hard, and he never had dug any coal before, and he did not know how to dig it. One big, strapping prisoner told me that he did not find it hard to get out his cars of coal because he understood the job, but that he felt sorry for the younger and weaker man. He said that sometimes when the guards were not looking he helped these boys get their cars full of coal so that they would not be put on a bread-and-water diet and chained up to the walls of the dungeon.

I think the mistake lies in putting convicts in mines at all, because a convict mine tends to deaden and brutalize, and these men need such work as will reclaim them. They need personal care, attention and supervision. This is impossible. In the dark recesses of the mine some of the most revolting and unspeakable crimes have been committed. In the second place, it seems to me self-evident that a big, stout, able-bodied man should not be given the same task as the weak, frail fellow, and the prisoner should not be required to get the same amount of coal on the first day as he does on the last, when he becomes

experienced. Another thing: These raw recruits know nothing whatever of "black deeps" or "gases," or the laws governing and controlling air-currents, the use of explosives, etc. This makes mining a hell inside prison gates for a man who has no other alternative than to go down to this black death-cell every day or go to the dungeon and starve. Again, the mines are so dangerous that for many it proves a death sentence. Mining as a form of prison work has long ago been relegated to oblivion by the enlightened nations of the earth, and it is pitiful in the extreme and a sad commentary on the state of Kansas that one of her institutions is still maintaining the same.

OTHER EMPLOYMENT.

I found many of our prisoners working at contract work. The shop conditions were not very bad, although in the furniture and twine factories there is need for improvement—the most objectionable feature being the system of allowing the contractors to measure the task which the prisoner must do. I have shown that in the mines each man must do his daily stunt, whether he is physically able or not. In the shops the contractors are allowed to say just how much shall constitute a day's work. All men are not equally skillful or capable, so the inferior prisoner is pushed to the limit by fear of punishment, while the more capable ones fare much better. If a task were measured by the capacity and skill of each individual conditions would be much improved, and it might be a step forward if the warden himself would fix the task, instead of the contractor. But it is the experience of every prisoner that where the contract system gets a foothold men are worked to the limit of endurance, and inability and failure on the part of the prisoner results in the most hideous system of punishment. In the twine rooms suction pipes should carry off the lint and dust.

PUNISHMENT.

While down in the mines, a big husky convict told me that one of his partners was then undergoing punishment in the dungeon because he was unable to get out his three cars of coal. After leaving the mine I asked to be shown the dungeon where the man was being punished. My request was granted, and I found a seventeen-year-old boy from Oklahoma shackled up to the iron wall of the dungeon. The lad was pale-faced, slender, boyish, and frail in appearance. I said, "What are you doing here? Why don't you mind the authorities?" He answered, "I don't know much about digging coal; I work as hard as I can, but sometimes the coal is so hard, or there is a cave-in, and it takes time to build up the walls, and then I just can't get the three cars of coal. I got over two cars the day they threw me in here."

The law of the three cars is inexorable, and it seems to be most unjust. Several prisoners complained of the "water

hole" and the "crib." While I was in the mine the superintendent went forward to speak to a guard, when a coal-be-grimed convict shot swiftly, silently and stealthily from the darkness, grabbed me by the arm and whispered hurriedly these words: "See the water hole, girl; for God's sake, see the water hole." I said, "What is the water hole?" He answered, "Where they throw us in and pump water on us. It's terrible, see it." Before I had time to ask where to find the water hole the convict was gone—the superintendent was returning. Later I was passing a bunch of prisoners, with the superintendent considerably in the lead, when another prisoner leaned cautiously forward and hurriedly warned me to "see the water hole." I asked the warden an hour later; he answered, "There is no water hole." Two weeks after my return from Lansing I received the following verbatim letter from one of the prisoners there, but withhold the name of the prisoner lest the fury of the authorities fall heavily on his helpless head:

DEAR MISS BARNARD—I take the liberty to write you this personal and secret letter for a twofold purpose; first, to put you right in regard to the prison officials toward you and your position since your late visit, and second, to give you some encouragement from those most interested and benefited by your efforts. I am an Oklahoma prisoner and my work has permitted me to study the inside. Your coming was as a bolt of thunder from a clear sky, and you shook this rotten old institution with the first genuine scare they had since the time of the Populists. But do not be deceived—you only scared them temporarily. After you had come and gone we fell into the old rut, and by Saturday night the "holes" were all full and the crib and water played no small part, so official displeasure at your frankly expressed opinions vented itself in retaliation upon helpless convicts. Your circular letter reached us, and kindly, dignified with a genuine stamp of charity, it brought joy and hope to more than thirteen hundred hearts and tears to many eyes. When you announced yourself, the whitewash was quickly applied wherever possible before your coming so you only saw a part—a very small part. We all wonder if you will ever learn the whole truth. After your departure the local papers roasted you to a finish, at the instance of the man who you denominated a brute. The *State Capital* took it up and to-day all Oklahoma papers were confiscated—we are wondering why. The instruction to write to Mrs. Haskell was a scheme to discredit you in the eyes of the public and to stir up some disagreement between yourself and Governor Haskell, and distract attention from the real issue. It emanated from the deputy warden. Now I shall not attempt to enumerate the grievances and wrongs perpetrated upon these helpless convicts, but the greatest of all is the merciless brutality of the illiterate, narrow-minded, nigger-loving executive head—the deputy warden. The real crimes of this institution escaped your eyes through no fault of yours. I only wish I might point you to the truth, not alone for the sake of the Oklahoma boys, but also for those we leave behind. Again, there is another side. We are not angels, by any means; many of us are selfish, many crooked, treacherous, unreliable, but this place is responsible for a large part of these miserable traits. Go into the open market, Miss Barnard, and feed a man on nine cents a day and work him ten hours, six days in the week, year in, year out, and then take what is left; would you blame him if he lied and stole and robbed for something to eat? Would you blame him and put a ball and chain on him and throw him in the dungeon chained to a wall because he tried to get away from you? Would you rob him of self-respect, subject him to tyrannical humiliation, simply because you were in authority? Would you compel him to submit to the most revolting immorality or be

punished for refusal? If so, send your boy to the Kansas State Penitentiary, and you have truly accomplished all this and more too. The place is an institution of reform indeed. It is a hotbed of anarchy—a nursery of dishonesty, of deceit and crime. If I am ever permitted to talk to you or your representative, I have the nerve and the inclination to tell you the truth.

Now, Miss Barnard, I am not asking personal favors of you, but only ask to offer information from behind the scenes, and encourage you in your work by the knowledge that you are appreciated by the boys behind the bars. Already we have learned to call you, not jestingly, but reverently, "Our Kate," for your coming, while it has as yet borne no fruit but thorns, was to us as the sudden appearance of a lighthouse in a stormy sea—a rose in a desert waste. Should I ever be so fortunate as to be permitted, such talents as I possess shall be at your disposal without money and without price to assist you in your worthy efforts against fearful odds. Feeling sure you appreciate the great risk I incur in thus writing you, I know you will regard this letter as strictly confidential, never referring to it through the mails to this place.

Wishing you every success in your efforts, I am

Yours truly,

I withhold the prisoner's name and will never divulge it unless to do so by some court of evidence, and upon proper assurance that he will have immunity from punishment.

It is evident that some complaint had filtered out of prison and that the good people of Kansas had revolted against the inflicting of inhuman punishment, for in the General Statutes of Kansas, 1905, is found the following law:

CHAPTER 99, ARTICLE 30.

SEC. 7701. *Punishment.* § 607. There shall be no corporal punishment and no painful kinds of punishment inflicted, such as binding the limbs or any member thereof, or placing and keeping the person in painful posture; and the punishment of delinquent prisoners shall be restricted to the ball and chain, but so used as not to torture the person or limbs, and to close and solitary confinement, with such deprivations of light and limitation in kind and quality of food as may, in the exercise of a sound discretion, produce distress without hazarding the life of the offender."

This law is being flagrantly violated. I was told by one prisoner, in the presence of Warden Haskell, that he had been punished by means of the thoroughly inhuman "water cure." Several other prisoners told me that they had been punished by the "crib" and "water cure." They also told me that the Kansas prisoners were better treated and less frequently punished. Of course it is necessary to keep rigid discipline in a penitentiary, as there are many abnormal natures to be controlled; but rigid discipline is compatible with humane methods. This brings up the whole question of systems and methods, and it remains to Kansas's shame that it still clings to a system that has long been abandoned by most of her sister states. The statute above given is a dead letter.

If we had no place to transfer our prisoners it would seem best not to create excitement by going into these harrowing details, but there is an available place to which our prisoners may be immediately transferred. I speak of the Leavenworth Penitentiary. True, this is a federal prison, and we would first

have to get an act from Congress permitting us to place our prisoners there; but last winter Dr. Samuel J. Barrown, who has charge of all the federal prisons of the United States, told me he thought it would be an easy matter to make this arrangement with Congress. He said it would first be necessary for our legislature to memorialize Congress for a special act, and he promised to go before Congress personally and help secure its passage for the sake of affording Oklahoma prisoners relief. If you who read these pages could visit these two institutions and inspect them, as I have done, I am sure you would not hesitate.

"WATER CURE" AND "CRIB."

I found in the hall of punishments something called the "crib." The "crib" is a coffin-like structure, constructed of slats, about the size of a man. They throw the man into his "crib" and lock the lid down on him. This was intended originally to be sufficient punishment. I am told by an Oklahoma prisoner who has been in the Lansing Penitentiary that they shackle the hands and feet of this man, draw them in a knot at his back, and then throw him into his crib and lock the lid down. This punishment caused temporary paralysis to one prisoner. Warden Haskell tells me that he has not allowed this since his charge of the prison. However, an Oklahoma prisoner, whose name I am prepared to give, stated to me in the presence of Warden Haskell that as a punishment to him Warden Haskell had thrown him into the "crib" and strapped him down, with his back to the bottom of the structure, had shackled his hands with handcuffs, and then ordered the guard to turn the garden hose on his nostrils and mouth until his head and lungs were filled with water almost to the point of suffocation. Warden Haskell heard this man tell this, and acknowledged it. This I believe is a cruel and inhuman and unnecessary punishment, and too obsolete to be inflicted in a twentieth century Christian civilization. I talked afterwards with the great warden of one of the largest penitentiaries in the United States, and he said "Any one who inflicts the 'crib' or 'water cure' punishment is dealing with methods absolutely obsolete, and this punishment should be stopped by enactment of law." I found fourteen black, inky dungeons, with sprockets on the wall and handcuffs hanging loose at the door. These dungeons are made so that only a little air can pass through small openings high on the wall at either end. When the door is closed the dungeon is in inky darkness. A man lies on the dungeon floor during the night, and is handcuffed to the sprocket in the wall in a standing position during the day. A long trial of this treatment, together with the bread and water diet, decreases a man's physical vitality so he is unable to get out as much coal as he did before the punishment.

GUARDS INFLICT PUNISHMENT.

In talking with ex-convicts and the prisoners in the Lansing Penitentiary, a common subject of complaint was that the prison guards are largely responsible for many of the cruelties practiced, and that they do not report to the warden the punishments which they inflict on the prisoners. This is contrary to the rules and regulations of the prison. This fault may be largely due to the warden, for in a conversation about guards he stated: "I consider that a guard has the best record who reports the least number of punishments in securing good prison discipline." Now, the guards know this, and they have fallen into the habit, some of them, of inflicting punishment without reporting, and of meting out this punishment according to their own crude ideals of right and justice. One case came under my observation. On the second day of my visit I went down into the dungeon and there found a sixteen-year-old Oklahoma boy shackled up to a sprocket in the dungeon wall. Upon inquiry I found that he had been placed in this dungeon the night before, and that he had called for the warden at seven o'clock in the morning when they lifted him from the floor to shackle him to the wall. Now, according to the prison rules and regulations, this guard should report immediately to the warden and the warden call on this little boy. As a matter of fact, the guard did not report that the boy wanted to see the warden, and as late as three o'clock in the afternoon I found him still chained to the wall. He promised to be good in the future and pleaded to see the warden. I took it upon myself to reprimand the guard, and went immediately to the warden with the case. I am inclined to think that this thing happens often. The boy's name is Eddie Reese, from Harrington, Okla. His step-father, I believe, is Riley Davis. I believe that the warden does not know a great deal of the punishment which is meted out to the prisoners by the guards in his employment.

Now the wardens of state penitentiaries are well-paid men, and as a result they are usually high class men. The guards are poorly paid men, and we find few who are willing to take the job. Those who do engage in this work are not always of the superior quality who should have authority to pass judgment and inflict punishment on helpless men.

Again, the attitude of the guard is wrong. A prisoner has done wrong, but he is a man nevertheless, and is entitled to fair respect. All men have a spark of divinity, and no guard should forget this. During my visit, the superintendent of one department showed me a beautiful inlaid table made by a prisoner who was standing near. I said, "Who made this beautiful piece?" The superintendent answered, "That thing," pointing at the poor abashed prisoner. Is it any wonder prisoners lose self-respect?

INSTRUCTIONS OF GOVERNOR HOCH.

EXECUTIVE DEPARTMENT,
TOPEKA, KAN., December 29, 1908.

Messrs. F. W. Blackmar, F. D. Coburn, S. J. Crumbine, Chas. M. Sheldon and Frank Gilday:

GENTLEMEN—Serious charges having been made against the management of the Kansas Penitentiary by Miss Kate Barnard, commissioner of charities and prisons (an elective office) of Oklahoma, you have been selected by me to coöperate with a similar committee appointed by Gov. C. N. Haskell to make an investigation of this institution and of these charges.

It is my desire that this investigation be absolutely fair and impartial, thorough and complete. If all or any of these charges are true, not only the people of Oklahoma—nearly 500 of whose prisoners are kept in our Penitentiary under contract—but the people of this state as well, are entitled to know the facts. It is due to the warden of this institution, Hon. W. H. Haskell, to say that he has repeatedly insisted upon this investigation since these charges were made, and that he, no less than I, desires it to be without fear or favor. I desire that you secure the services of a competent stenographer and make a record of the important testimony that may be given in the investigation. It is my desire that you ascertain and report to me the real facts as they exist, or have existed, covering particularly the following points:

First. The sanitary condition of the prison, its cell houses, its mines, its culinary department, its workshops, its hospital. In short, every part of the prison where prisoners are kept, day or night.

Second. The quantity and quality of food furnished the prisoners, the methods of its preparation for their daily consumption. In short, the whole question of the wholesomeness, or the contrary, of their daily diet.

Third. The punishments and methods resorted to to enforce discipline.

Fourth. The attitude of the officers of the institution toward the prisoners, from the warden to the lowest subordinate in rank, whether gentlemanly and humane, or the reverse.

Fifth. Along any other lines in which your judgment may lead you.

In order that this investigation may be of greatest value, let me suggest that officers and prisoners alike, who may be called upon to testify, may be assured that no harm shall come to them from any testimony they may give, so far as this administration can give such an assurance and so far as the incoming administration can be influenced by me, and I have no doubt whatever of the hearty approval of this assurance by the gentleman who is to be my successor.

I wish, gentlemen, that you might visit the federal penitentiary at Leavenworth and consult its warden, one of the most eminent criminologists and penologists in the United States, compare the conditions there, the methods of punishment, the sanitary conditions, the dietary facts and other matters with our own institution. It is my desire also that you not only investigate the specific charges contained in the official Oklahoma report referred to and report the result of the findings to me, but that you make such recommendations, if any occur to you, as in your judgment will tend to make our Penitentiary an ideal institution of its kind.

Should you discover any facts to sustain these charges, or discover any wrongs not specifically charged, it is my desire that you definitely locate the blame if possible, without regard to whom it may affect. Should you see fit to suggest any prison reforms it will be my very great pleasure to turn your report over to my successor and ask him to make such recommendations for legislative assistance in carrying them out as may be necessary.

If you desire further information or assistance from me, command me.

Yours very truly,

(Signed) E. W. HOCH.

MINUTES OF THE COMMITTEE.

TOPEKA, KAN., December 29, 1908.

The members of the committee, composed of F. W. Blackmar, of the University of Kansas; F. D. Coburn, secretary of the State Board of Agriculture; Chas. M. Sheldon, of Topeka; Dr. S. J. Crumbine, and Frank Gilday, state mine inspector, were called by Governor Hoch to attend a meeting at the governor's office at the statehouse, in Topeka, on Tuesday, December 29, at four o'clock P. M. All the members of the committee were present. Governor Hoch then proceeded to give his instructions to the investigating committee, requesting them to be thorough and impartial in their investigation and report. After this the committee proceeded to organize, by the election of F. D. Coburn chairman and F. W. Blackmar secretary. After a discussion of methods of procedure, the committee adjourned, to meet with the committee from Oklahoma at the Kansas Penitentiary on Wednesday, December 30, at two P. M.

DECEMBER 30, 1908.

The committee held an informal meeting about 8:15 P. M., on the train from Lawrence to Leavenworth by way of Holliday. Members present: Coburn, Sheldon, Crumbine, and Blackmar, and Prof. E. H. S. Bailey, the latter having been requested by Governor Hoch to join the committee as chemist. The meeting resulted in an informal discussion of the charges of Miss Kate Barnard, the instructions by Governor Hoch, information received outside, and the basis of the investigation.

STATE PENITENTIARY,

LANSING, KAN., December 30, 1908—2 P. M.

Pursuant to adjournment, the committee of investigation met at Lansing in joint session with a similar committee appointed by the governor of Oklahoma. (As the minutes of this meeting are recorded in the joint session proceedings, only a brief reference to transactions will be made here.) There were present at this meeting Messrs. Coburn, Crumbine, Sheldon, Blackmar, Gilday, Professor Bailey and Atty.-Gen. Fred S. Jackson, the latter having come at the suggestion of the committee and at the request of Governor Hoch. Members of the Oklahoma committee present were: E. J. Goulding, state senator; Chas. West, attorney-general; J. P. Connors, president State Board of Agriculture, and George Cullen, a mine superintendent. W. H. Murray, the fifth member of the committee, was not present. The joint committee proceeded to organize by the election of F. D. Coburn chairman and F. W. Blackmar secretary. The committee from Oklahoma, feeling obliged to return home at once, desired an adjournment, and to set the

time for the investigation at a future date. After some discussion it was agreed that the joint committee should work until seven o'clock, at which time it should adjourn, to meet at Lansing on January 7, 1909, at nine o'clock A. M., in the office of the board of directors of the Kansas Penitentiary; it was also further agreed by the Kansas committee that as such it would continue in session, to conduct a separate investigation in their own behalf, provided Governor Hoch approved. The committee from Oklahoma gave their consent to this mode of procedure. The members of the committee then separated into groups for their work, part of them going into the coal mine for investigation of its sanitary condition, part going into the hospital, and part into the laundry, kitchens, dining room, cell houses, tuberculosis pavilion and hospital for the insane. After supper, the Kansas committee, having been advised by Governor Hoch to go ahead with the investigation, proceeded to investigate the evening school of the Penitentiary. After this they held a meeting in the warden's office and took the testimony of the Rev. E. A. Fredenhagen, general superintendent of the Society for the Friendless. He gave interesting information in regard to the opinions of discharged and paroled prisoners. Warden Haskell was also asked to describe some methods of administration. The committee adjourned, to meet at the Penitentiary the next morning at 8:30 for further investigation.

THURSDAY, December 31, 1908.

Early in the morning of December 31, Messrs. Gilday and Bailey went into the mine, where they remained the greater part of the day. Coburn, Crumbine and Blackmar investigated the cell houses, kitchen, dining room, hospital, tuberculosis pavilion and insane ward. The committee, unannounced, took dinner with the prisoners. After dinner the committee, through the courtesy of Warden Haskell, were driven to the swine quarters of the farm, and to the reservoir and water-works. On returning to the Penitentiary they were shown the different methods of punishment, by Warden Haskell, and visited the dark cells, the crib and the solitary cells. The committee telephoned to Attorney-general Jackson, and agreed to meet the next morning at ten o'clock to take testimony, and then returned to Leavenworth. The woman's ward was thoroughly inspected by the committee. After returning to the administration building, Doctor Kanavel, the prison physician, gave testimony in regard to the methods of the so-called "water-cure" and the hospital service.

LEAVENWORTH, December 31—8 P. M.

The Kansas committee held a meeting in the National Hotel, in Leavenworth, for the purpose of discussing methods of procedure in the coming investigation. There were present Coburn, Crumbine, Gilday, Sheldon and Blackmar. After a

lengthy discussion, they determined upon the methods of procedure in taking testimony. The committee adjourned, to meet at the State Penitentiary next morning.

STATE PENITENTIARY,
January 1, 1909—9 A. M.

At the suggestion of Chairman Coburn, the committee met in the office of the warden of the Penitentiary, where the following resolutions were unanimously adopted:

WHEREAS, The use of the structure known as the "crib," built by a prison administration many years ago, has been abandoned; and

WHEREAS, The so-called "water-cure" administered in this "crib" has been found unnecessary, and is obsolete in some of the best penal institutions in the country, and has already been discontinued by the prison administration here;

Therefore, We request the board of directors to destroy the appliances and paraphernalia pertaining to its use, including the "crib" itself, known among the prisoners as the "water hole."

The committee then adjourned to the library, where they met Prison Chaplain McBrian, and also investigated the conservatory and the solitary cells. Subsequently they went in the yards to see the two cribs cast out of the windows by order of the Board of Directors. The cribs were broken with axes and burned at once.

STATE PENITENTIARY,
LANSING, January 1, 1909—10:30 A. M.

The committee assembled to take testimony. There were present Coburn, Crumbine, Gilday, Sheldon and Blackmar. Attorney-general Jackson was also present to assist in conducting examinations. Before beginning the investigation, on vote of the committee, Senator-elect J. T. Reed, of Smith county, was allowed to be present by courtesy, representing Warden Haskell during the latter's absence.

The first witness, prisoner, was called, and before proceeding with the investigation Warden Haskell stated before the prisoner that no witness would be treated harshly or unjustly in any way on account of testimony given in the investigation; that he was to speak the truth, whether it was for or against the officers of the institution or prisoners, and he would be respected for it and protected. The examination of prisoners and officials continued during the entire day and until ten P. M. The committee adjourned, to meet next morning at the federal prison, to investigate the punishment and care of prisoners there.

FEDERAL PRISON,
JANUARY 2, 1909.

The committee, consisting of Coburn, Crumbine, Sheldon, Gilday, Blackmar, and Attorney-general Jackson, by the invitation and courtesy of Warden R. W. McClaughrey, visited the federal prison and were shown the methods of punishment, the

cell houses, dining room and kitchen. Afterward the committee accepted an invitation to take luncheon with Warden McClaughrey, and after luncheon Coburn, Sheldon, Gilday and Attorney-general Jackson went back to the shops and Blackmar and Crumbine returned to the state prison to complete their investigation. Then the committee disbanded, agreeing to meet January 6, at Leavenworth, to consider their report to the governor.

F. W. BLACKMAR, *Secretary*.

REPORT OF THE COMMITTEE TO GOVERNOR HOCH.

To His Excellency, E. W. Hoch, Governor of Kansas:

SIR—Your committee appointed to work conjointly with a similar committee appointed by Governor Haskell, of Oklahoma, to investigate the conditions and methods of administration of the Kansas State Penitentiary, on account of serious charges made by Miss Kate Barnard, commissioner of charities and prisons for Oklahoma, beg leave to submit the following report:

Owing to the limited time permissible to your committee on account of the desirability of making a report before the close of your administration, it is impossible at present to cover some points of minor detail which would appear in a more complete report of an extended investigation of several weeks. Nevertheless, so far as the investigation has been carried, as represented in this report, it has been thorough, and the conclusions reached are substantiated by the facts revealed in the investigation and are supported by the unanimous opinion of the members of the committee. From the nature of your instructions we do not infer that we were to investigate the character, standing or official conduct of any officer in particular, but to show whether evil conditions exist and whether the charges of cruelty, inhumanity, bad sanitation and other defects of administration could be in any particular substantiated.

GENERAL STATEMENT.

The Kansas Penitentiary, notwithstanding many defects, ranks well among state penitentiaries of the several states in the Union. There are several that average better and a larger number that average worse. In some things the Kansas Penitentiary excels, in others it is deficient. Yet in looking over the condition of the Kansas Penitentiary, and the methods in vogue during recent years, there is evidence of constant improvement; and without casting any reflection on previous administrations, it is safe to say that the present administration, so far as the points enumerated in your letter of instruction are concerned, is better than that of any previous administration. This statement is not made for the purpose of comparing the efficiency of different wardens, but rather to show that so

far as sanitation, humane treatment of prisoners, business administration and material conditions are concerned, the present condition and the present administration have not been excelled by any that have preceded them.

However, there are two vital defects that have hampered and harassed every warden during the last twenty years, which are chargeable to state policy rather than to administrative officers. Around these two monumental errors of public policy cluster all of the minor evils attendant upon the administration of the affairs of the Penitentiary. First, the Penitentiary is conducted as a money-making institution! Each warden is required to make a good financial showing to satisfy the demands of the political party in control, and if he fails it not only reflects on him, but gives the opposite party a chance to make political capital. The Penitentiary exists for the purpose of the punishment and reform of men and women who have violated the law and have in many cases acquired vicious and criminal habits. It is a method which the state has of protecting all of the people of the commonwealth, by confining, punishing and improving those who are not disposed to observe the laws of the land. In former times, the penitentiary was looked upon as a place in which to thrust the offender against society, without any consideration of his personal life; the main idea being to get the criminal out of sight and to keep him there. Even to-day many people do not look upon the penitentiary as a reforming institution. Yet a careful examination of the punishments in the Penitentiary (a member of the committee has examined the record of every punishment of every prisoner for the last three years), and a careful observation of the conduct of men paroled and discharged, show that the Kansas State Penitentiary is a reforming institution and that it is gaining in this respect.

If the general state policy were changed in regard to the money-making plan it would rapidly become what it ought to be; for, while the Penitentiary ranks fairly well to-day with other institutions of similar nature, it is not up to the grade demanded of it by the intellectual and moral standard of the people of Kansas. Labor—systematic labor, and in many instances hard labor—is essential to all reform. This is true of all delinquents, defectives and ultradependents. But labor should be made subservient to reform and not reform to labor. The biennial report of the Kansas State Penitentiary makes as fine a business showing as may be found anywhere. The earnings in excess of expenditures during the fiscal years of 1907 and 1908 were \$69,200.99. Considering permanent improvements of \$30,911.75, the total net earnings were \$100,112.74. This amount should have been devoted to the moral and educational improvement of the prisoners and the material improvement of the Penitentiary. But next year there will be a greater demand for brick and a greater demand for coal and

a greater demand for binding twine and a greater energy to make more money to make a better showing.

What form of justice is it that forces a part of the people who have gone wrong to support the other part? True, the prisoner has forfeited citizenship, but has the state therefore lost its obligations to the prisoner to deal justly and fairly by him? If the prisoner has lost the right to the product of his own labor (and we sincerely doubt if he has entirely), the state has not canceled its obligations to the prisoner. The usual explanation is that courts are expensive and that the prisoner should be made, as far as possible, to pay for the extra cost incurred. What the state needs is not a few paltry dollars saved by prison labor, but to lessen the expense of crime by decreasing it.

A short time ago the warden received orders to use every available man to mine coal to supply other state institutions. The twine plant was closed and men were hurried from this and other places of work. A few thousand dollars will be saved to other institutions, but the loss in expense of discipline and moral effect by such shifting of men to satisfy the money equation will more than counterbalance the money saved.

Let it again be emphasized that your committee believes that labor is essential; that there is no objection to this labor paying the legitimate expenses of the Penitentiary. But it objects to subordinating the moral, physical and intellectual conditions of prisoners to the process of producing a surplus. Give the warden a chance to work the moral and intellectual discipline to its fullest extent, and then there will be cause to complain if the humanitarian practices in the conduct of the Penitentiary are lacking. It appears to the committee that if the \$100,000 net earnings had been devoted to an adequate hospital service; to adequate educational facilities; to a larger force of officers of higher grade, and consequently with better salaries; to a new kitchen; to better food; to better care of the criminal insane; to a tuberculosis pavilion, and similar improvements, it would be wise and humane and in the long run economical. Or if the surplus had been reduced by reducing the hours of labor to eight per day, or by setting to the credit of each prisoner who observed the rules a portion of his daily earnings, it would be better than to make a showing of a surplus. Let the prisoner have a larger portion of his daily earnings to help support his family outside when necessary, or to be saved until his term expires, and he will feel the responsibility of life, which will be a reform measure in itself. The civilized world has outgrown the practices of chattel slavery and the traffic in human beings for gain outside of the penitentiary. Let Kansas stop it within the Penitentiary, for the sake of humanity.

The other fundamental defect in the Penitentiary is that it has been subservient to partisan politics. A warden should

have a long tenure of office. He should not be removed so long as he is eminently capable, nor should he be appointed on account of political influence. The science of penology is a life-long study, and the warden and all of the officers should be appointed on account of preparation and efficiency, and sufficient compensation should be given to induce men of ability to accept positions in the administrative and disciplinary force and to give them opportunity to continue their studies in order to improve their service.

Except in minor details herein stated, the charges made by the Oklahoma commissioner of charities and prisons against Warden Haskell and his subordinates of cruelty and inhumanity to prisoners; of poor and insufficient food; of excessive and dangerous labor in the mines; of poor sanitation, and of discrimination against Oklahoma prisoners, are not sustained by our investigation. While no legitimate complaint of serious maladministration can be successfully urged against the prison authorities, there are improvements desirable and evils to be corrected in the equipment and management of the Penitentiary. The committee found no evidence of any real or intended discourtesy to Miss Kate Barnard on the part of Warden Haskell. He was simply following long established rules and customs which have been found essential to proper prison discipline.

THE CLASSIFICATION OF PRISONERS.

It appears to the committee that a better classification of prisoners should be made in regard to work, methods of punishment and general treatment. Evidently there is need of more care in separating those who are in need of medical care on account of weak and defective minds from those who are sound. Considerable of the necessary punishment of prisoners occurs from failure to comprehend their mental condition. Successful punishment for discipline is a great art and few men learn it. To know how to fit the punishment to the offender in each case requires great knowledge of the peculiar characteristics of prisoners, and great skill and ingenuity in administering it. There are prisoners in the Penitentiary who have a record of frequent punishments who belong in a hospital rather than in a mine. Greater care in the assignment of prisoners to work to which they are adapted on account of physical and mental conditions would add much to the discipline of the institution.

If possible, a greater variety of occupations should be provided to admit of this. The separation of the instinctive and habitual criminals from those who have by accident or force of circumstances violated the law and are found within the Penitentiary should be accomplished. The use of uniforms of different grades, recently adopted, is a marked improvement. If occupations could be graded according to desirability, so

that prisoners could be advanced from grade to grade by way of promotion on account of good conduct, it would add much to the discipline of the inmates. Of course, all of this is recognized in a general way, but it should be practiced with accuracy and detail. Especial care should be exercised over young criminals and first offenders, not to put too great a strain upon them. Moderate work and more instruction might lead to a better life without severity of punishment.

THE OKLAHOMA PRISONERS.

It is a great mistake for Oklahoma to send her young criminals—subjects for a reformatory—to the Penitentiary, and it is a mistake for Kansas to receive them. Indeed, it is a social crime for these two states to enter into a contract to send young boys to the Penitentiary where there is not proper provision for their care and adequate instruction. As an accommodation to the territory of Oklahoma, Kansas began years ago to take care of Oklahoma prisoners. This has grown into a system pernicious to both states, particularly to Kansas. There are several glaring evils in connection with the practice. That of sending young prisoners to the Penitentiary to engage in labor with life prisoners and to submit to the discipline of labor necessary in a penitentiary has already been noticed. The fact that a very large number of Oklahoma prisoners are diseased makes them exceedingly undesirable. The record shows that of the 533 prisoners received from Oklahoma during the last year, 318 have had venereal disease; 200 of these have had syphilis, 172 both syphilis and gonorrhea. Moreover, of 533 enumerated, one-fifth were so debilitated on their arrival that they had to be given light work; 4 were put into the hospital for tuberculosis and have not worked at all; 7 were sent to the hospital on their first entrance and isolated on account of syphilis. Surely Kansas ought not to be importing disease and degeneracy into the state, even though it be confined in the Penitentiary. When these prisoners are discharged or paroled many go into Kansas, which can be no great advantage to the state.

Since the visit of Miss Barnard to the Kansas Penitentiary, there is a growing discontent among Oklahoma prisoners, for they have been made to feel that they are discriminated against. A careful inquiry into the facts discovers no such discrimination, as Oklahoma and Kansas prisoners are treated alike as to both labor and punishment. Indeed, the committee found Oklahoma prisoners occupying some of the best appointments about the Penitentiary because, we were told, they were merited. Again, on account of the presence of the Oklahoma prisoners, Kansas gets a large criminal record abroad. Frequently people inquiring into criminal conditions in Kansas in reference to the prohibitory liquor laws are astonished at the

large number of prisoners in the Penitentiary, failing apparently to note that over a third of them are from Oklahoma.

On account of the foregoing evils your committee feels that the care of the Oklahoma delinquents by Kansas is a menace, and that the practice should be discontinued at the earliest possible date.

It was intimated in the charges that Kansas was making money off of the labor of the Oklahoma prisoners. While the prison's surplus of over \$100,000 would seem to indicate that the Oklahoma prisoners have contributed in part to an income, there are other items to be considered which would practically reduce this amount, as shown in the cost of buildings, factories, mines, machines and other equipment. The following statement will throw some light upon this subject.

PUNISHMENT AND DISCIPLINE.

It is to be expected that men who have habitually violated the rules of social order and the law of the state would repeatedly violate the rules of prison discipline. When we consider the number of this class of persons assembled on a small area, many of whom know not how to work and who have never willingly submitted to any form of order or discipline, it is evident that the control of prisoners is no easy task. Under such conditions, strict obedience to prison rules is absolutely necessary. Your committee realizes that to enforce discipline severe punishment may be necessary. They believe that while revenge, cruelty and inhumanity are never necessary, the prisoner must be held responsible for his conduct and must be forced when necessary to obey the rules. The fact that none of the guards are allowed to bear any arms whatever, not even in the form of a club or cane, and the prisoners are placed upon their honor, renders it very necessary that infractions of the rules and insubordination shall be met with swift and severe punishment, regulated by the nature of the offense. While your committee has found instances of severe punishment there is no evidence of revenge, cruelty or inhumanity in the forms and methods of punishment. However, while punishment is not too severe, yet owing to the kind of work, the lack of personal interest in the individual, traditional and perfunctory methods, or limitations of the official force, there are instances of a lack of proper discrimination in the punishment of prisoners. The modes of punishment are as follows:

1. Deprivation of privileges, such as tobacco, library, letter writing, etc.
2. Loss of bed, leaving the prisoners to sleep on wooden slats or boards without ticks.
3. Diet temporarily reduced to bread and water.
4. Depriving the offender of his Sunday dinner.
5. Confining the prisoner in a darkened cell for one or more days (spoken of as "the hole").

6. Handcuffing him to a wall or door in his cell.
7. Depriving him of his dinner.
8. Dressing him in a striped uniform.
9. Solitary confinement—locking him in a cell and depriving him of “privileges.”
10. Having him break stone in the stone-shed.
11. Attaching a ball and chain to his ankle.
12. Temporary confinement in the crib (now obsolete).
13. The crib and “water cure” (spoken of as “the hole”; now obsolete).

Most of these forms of punishment need no comment, hence reference will be made to only two or three under controversy.

The “water cure,” as described by those who have received it and by those who have administered it, consisted in placing a prisoner in a “crib,” a structure made of an oak frame and slats, in the form of a chest. It was eight and one-half feet long, two and one-half feet high and two feet wide in the clear. It was constructed about twenty-eight years ago for the purpose of temporarily confining, or rather restraining, otherwise unmanageable prisoners, particularly the dangerously insane. It was subsequently used for punishment in particular instances by strapping the unruly prisoner in it, in a sitting or reclining posture. Finally, the “water cure” was used in connection with it. This consisted of stripping the prisoner of clothing, placing him in the crib with his hands in cuffs and feet tied, binding him fast with the strap, and playing water on him from a garden hose. The nozzle of the hose was held about six feet from the body and the water played up and down the body and on the face. After the first spraying an interval of rest was followed by another application, until the prisoner yielded to discipline. After the punishment the prisoner was rubbed dry, and after resting returned to work. It was a novel punishment, rather startling and disagreeable, but not painful or cruel. It was much dreaded by prisoners, who apparently magnified its terrors through superstitious fear. Upon the whole it seems to have been a very effective yet harmless punishment, without danger when properly administered. To prisoners with dull sensibilities and great fear of bodily pain it seemed a severe punishment, and wrought seriously on the imagination of evil-doers. Evidently it was cordially hated by those who endured it and it caused great consternation to those who feared it. However, there is a repugnance on the part of the public to this mode of punishment, and the warden was wise in abandoning it, although in the opinion of the committee it is much less injurious than long confinement in a dark cell on a diet of bread and water. It was a sudden shock—an effective punishment soon over. It was used but twice during the fiscal years 1906 and 1907, while the “crib” was used nine times during this period.

Handcuffing to the wall of the cell, practiced likewise in other prisons, is perhaps the most severe punishment in vogue at the Penitentiary. A vertical bar about eighteen inches long is bolted to the cell wall, to which is attached a movable iron ring. The lower part of the bar is about three and one-half feet from the floor of the cell. The prisoner is handcuffed to the ring; this enables him to change his position from side to side, to lean upon the cell walls; but he cannot sit down. When he wishes a guard he rattles the ring attached to the bar; upon promise to obey the rules he is released and goes to his cell or to work. This punishment is tiresome but not necessarily cruel. At night he is released and can sleep on the boards in the dark cell, but if he is still insubordinate and his punishment is not concluded he is again "cuffed" to the wall in the morning. He has a rest at meal time.

The dark cell is the most frequent punishment and is in common use in nearly all prisons on account of its convenience and effectiveness. It is the opinion of the committee that when long continued the cell must have a deleterious effect on the system.

So far as the committee has obtained the testimony of prisoners in the prison and from ex-prisoners it is pretty generally conceded that when prisoners have been punished it is because they have deserved it. However, there are perhaps exceptions to the rule, and prisoners are found who complain of unjust treatment. It must be remembered, in considering this point, that the lawbreaker is inclined to believe that all punishment is unjust, and to imagine that he is cruelly treated when any punishment is administered. Many of the reports that are circulated about cruelty and inhumanity in prisons come from irresponsible, untruthful prisoners who for the first time in their lives have been forced to yield to discipline and systematic labor. So far as their feelings go, all punishment is cruel and unjust because it is against them. Any one whose duty it is to administer punishment to such characters is cordially hated by them; yet attention is again called to the opinion of the committee that there is sometimes a lack of judicial discrimination on the part of the officials in suiting the degree and kind of punishment to the offense, and that greater exertion should be made to make the connection between punishment and reform by taking a kindly interest in the welfare of the prisoner.

PRISON ADMINISTRATION.

Your committee believes that the warden trusts too much to his subordinates under him, and that in some instances they are not true to the trust to the fullest extent. The committee believes that the deputy warden, stewards, guards, and in fact all officers, should be Christian men interested in the uplifting of humanity. Any official in a penitentiary who holds his office

merely as a "job," without the responsibility of service to humanity, has no legitimate place there. If there are any such in the Kansas State Penitentiary, the sooner they give place to those who have the honest purpose of serving a common humanity the better for the welfare of the Penitentiary and of the community at large.

The warden should have about him a class of men inspired with the high hope of reform and earnest consecration to the work. Every guard should possess the high qualities of the soldier and the missionary, and if the present methods will not permit the employment of such men, let them be eliminated and allow the warden to seek the men who are prepared for the work, and let the compensation be adequate for men of ability and high character.

Under the present warden any prisoner has free access to him for complaint or counsel at a stated time every Sunday.

SANITARY CONDITIONS.

The sanitary conditions are quite satisfactory, with the exception of the personal care of the sick. This is entirely inadequate, owing to the lack of a hospital for the sick, hospital for the insane, a tuberculosis pavilion and sufficient medical attendance. The physician should have an assistant in order that each case may be properly diagnosed, and that the hospital shall be properly supervised. Your committee would suggest that a graduate of the University of Kansas Medical College be given a year's residence at the Penitentiary as assistant physician. A hospital should be built for the criminal insane, preferably at a distance from the Penitentiary, where scientific care may be given to this unfortunate and dangerous class of patients. The general sanitation of the cell houses, of the kitchen and of the mine is good. There is one vital defect occurring on account of the lack of cell capacity, namely, the placing of two prisoners in a cell. This is entirely wrong, for sanitary and reformatory reasons, and should never be permitted. In the north cell house there are 68 cells with two beds, of which 33 have two inmates each. In the south cell house there are 86 double cells, and in the "new" cell house there are 217 cells with two inmates in each. Should the Oklahoma prisoners be withdrawn there would be sufficient room without doubling.

While the kitchen is reasonably clean, there is need of a new building with new utensils and new dining service. Bread-mixers should be introduced. In the dining room the food should be served with care by the use of a fork or spoon, and not with fingers, and the waiters should have clean jackets made for the occasion.

The cell houses are whitewashed once each month, the bedding is taken out and aired frequently, and whenever it is necessary the straw is emptied and the bedticks are washed;

the bed sheets are laundered every week. The cell houses are kept clean and neat; disinfectants are used in the cleaning. The water supply is good, being taken from wells near the Missouri river, whence it is pumped into reservoirs. After that it is conducted to the Penitentiary in pipes. The water is of good quality and there is ample supply under ordinary conditions. The water bucket for each cell is cleaned and aired every day.

KIND, QUALITY AND AMOUNT OF FOOD.

The food given prisoners is of fairly good quality and sufficient in quantity to sustain the average man under ordinary labor. The biennial report of the warden gives an average cost of eight cents per day per man for the fiscal year 1907, and nine cents and two mills for 1908. The increase of expense of 1908 over that of 1907 is fifteen per cent. This increase is no greater than the increase in prices of foods during this time. The food is really better than this showing, for the calculation does not include the products from the Penitentiary farm. The value of the farm produce is not calculated, but it includes such items as 39,353 gallons of milk; 105,349 pounds of pork; 13,285 pounds of beets; 13,622 pounds of rhubarb; 6791 ears of green corn; 1033 pounds of peaches; 4341 pounds of beef; 30,389 pounds of pumpkins, etc., for the year 1908. These items would increase the cost to eleven and one-half cents per man per day.

The per capita cost of food at the federal prison, where everything is bought, is twelve cents per diem. We doubt if this is too much. A scientific test was made by the United States army at Omaha a few years ago on balanced rations. For men who were put under a severe test of labor the cost per capita was fifteen cents per day. In this test great care was given to variety and to scientific rations. Men thrived and grew strong under the test and were well satisfied with the rations. It is the opinion of the committee that more fruit and milk should be added to the diet of the prisoners, and that a better quality of meat should be provided. The contract price for meat at four and one-half cents per pound causes contractors to give a poor quality in order to make a profit. This is evidenced by the fact that the warden has occasionally to return meat as not being up to the standard grade as implied in the contract.

There are only twenty-two cows on the Penitentiary farm to supply the milk for 1300 prisoners, and the officials, numbering about 100. It is not the purpose of the committee to recommend a luxurious or an attractive diet to the extent that the Penitentiary would become a popular boarding house, but they insist that the way to reform people is to begin with a substantial diet of wholesome, balanced rations of well-cooked, well-served food. Since the dairy and the hog farm and the broiling range have been introduced by Warden Haskell there

has been improvement in the diet. It might be improved in minor details, especially in regard to the fruit and the milk and in improved cooking and serving. It would be a wise economy so far as health, discipline and moral reform are concerned. The following is the bill of fare for one week, ending December 26, 1908.

The steward fills out a tentative bill of fare every Monday morning for the week, and submits it to the warden for approval.

BILL OF FARE

Will be as follows for the week ending Saturday, December 26, 1908.

J. R. MCELROY, *Steward.*

SUNDAY.

Breakfast.—Wheat bread, oatmeal, fresh milk and coffee.

Dinner.—Wheat bread, baked beans, weinerwurst, mustard, pickled beets, apple sauce and tea.

Supper.—Buttered buns.

MONDAY.

Breakfast.—Wheat bread, hash and coffee.

Dinner.—Wheat bread, boiled beef, boiled beans and rice soup.

Supper.—Wheat bread, syrup, tea, and what remains from dinner.

TUESDAY.

Breakfast.—Wheat bread, fried liver, brown gravy and coffee.

Dinner.—Wheat bread, fried pork, boiled peas and bean soup.

Supper.—Wheat bread, syrup, tea, and what remains from dinner.

WEDNESDAY.

Breakfast.—Wheat bread, hash and coffee.

Dinner.—Wheat bread, bologna, boiled beans, mustard and vegetable soup.

Supper.—Wheat bread, syrup, tea, and what remains from dinner.

THURSDAY.

Breakfast.—Hot rolls, sirup, butter and coffee.

Dinner.—Wheat bread, fried pork, hominy and bean soup.

Supper.—Wheat bread, syrup, tea, and what remains from dinner.

FRIDAY.

Breakfast.—Wheat bread, hash and coffee with milk.

Dinner.—Wheat bread, roast pork, mashed potatoes, brown gravy and mustard.

Supper.—Oranges, tea with milk and sugar, mince-meat pie.

SATURDAY.

Breakfast.—Wheat bread, fried liver, cream gravy and coffee.

Dinner.—Wheat bread, boiled pork, rice and tomato soup.

Supper.—Wheat bread, syrup, tea, and what remains from dinner.

Approved: _____

Warden.

The following expert testimony of Dr. S. J. Crumbine and Prof. E. H. S. Bailey in regard to sanitation and food is valuable in showing the present standard and needs of the Penitentiary:

The instructions to the committee on investigation, contained in the letter of Governor Hoch, under date of December 29, specifically charged

the committee to ascertain and report the real facts as they exist or have existed, covering particularly the following points:

"First, the sanitary condition of the prison, of its cell houses, its mines, its culinary department, its workshops, its hospitals; in short, every part of the prison where prisoners are kept day or night.

"Second, the quantity and quality of food furnished the prisoners, the methods of its preparation for their daily consumption, and, in short, the whole question of the wholesomeness, or the contrary, of their daily diet."

In reporting to the committee of the whole on these two propositions, it is our opinion that the general sanitary condition of the prison, including its cell houses, mines and other departments, could be fairly denominated excellent, and that the quantity and quality of the food furnished to the prisoners is of such a nature as to insure, and actually does produce, a healthful condition of the inmates.

That there are faulty sanitary conditions in various parts of the Penitentiary must be admitted, but these are in a general way the fault of construction, overcrowding, or inadequate means for maintenance, which the legislature has refused or neglected to provide, rather than a fault of administration.

Illustrations of these points may be cited in that many of the cells, due to the crowded condition of the Penitentiary, contain two prisoners, which, owing to the small cell space, is believed to be unhygienic. Indeed, this condition would be intolerable were it not for the excellent system of ventilation.

The sanitary condition and the equipment in the kitchen, dining room and bakery are not what they should be, although it is but fair to remark again that in the main this is the fault of construction and inadequate equipment. The brick and stone floors in the kitchen and bakery should be replaced with cement, and an up-to-date equipment supplied for the kitchen and bakery; particularly should the bakery be furnished with a steel mixing machine for bread-making, and a modern oven for baking. It was noticed that the compartment in which the bread is stored was not kept in as cleanly and sanitary condition as was possible, and it is thought that the floor of the kitchen might be kept in a more cleanly and dry condition than that in which it was found by the committee.

Perhaps the most serious unsanitary condition that was found by the committee was in the personnel of the waiters in the dining room, and their manner of distributing the food, particularly the meat. It was observed that the meat was placed upon the individual dishes by taking the slices in the hands instead of using a fork or other suitable utensil. Moreover, these waiters had no special uniform or dress, but were handling food products dressed in their ordinary clothing, without coats, the shirt-sleeves of many being dirty and unsanitary. It is urgently recommended that those handling food products be required to be dressed in clean uniforms, preferably white coats and caps, as obtain in the federal prison, and that wherever possible food products be served by means of clean utensils and not by the hands of the attendants.

A careful inspection of the food products in the storeroom and refrigerators disclosed that they were uniformly of good quality for their kind, with perhaps the exception of the beef. That is to say, the beef was not of the best grade, although it was entirely wholesome.

Investigation of the charge that on the 24th of December, 1908, a wagon load of beef had been condemned by the butcher because it was rotten was found to be untrue, the facts being that upon that date a load of beef was condemned because it was not up to the grade and standard required in the contract, it being thin, poor beef, but entirely wholesome and untainted. The low contract price for furnishing beef to the institution does not warrant the contractor in furnishing the highest and best grades of beef, and while a high grade of beef is not essential for the maintenance of health, yet the committee believes that a better grade of beef should be contracted for and delivered to the institution. Of the

testimony taken, but one person testified that tainted or spoiled meat had ever been served during his stay at the institution, covering some seven years, and he admitted that he knew of no cases of sickness following this alleged serving of tainted meat. The committee does not believe that tainted or spoiled meat has ever been served in the institution knowingly, but are of the opinion that more care should be exercised both by the butcher and the cook in inspecting every portion of meat that is sent to the kitchen to be prepared for food for the inmates. The committee observed several small pieces of meat that by the odor showed them to be getting old, and that they were in a slightly tainted condition. It is our opinion, however, that the sanitary conditions of the meat refrigerators, chopping blocks and utensils are above the average sanitary condition found in the meat shops and refrigerators throughout this or any other state.

The committee secured a sample bill of fare for a week, selected at random among the numerous bills that are on file in the warden's office, which is believed to be fairly representative of the menu served during any week the year round, and which is herewith appended, marked as "exhibit A." It is believed that while the food thus served is wholesome in quality and sufficient in quantity, that a somewhat greater variety should be afforded, particularly the addition of fruits, both fresh and dried, which would not only break the monotony of a stereotyped bill of fare, but would conduce to a better condition of health, particularly reducing the most common complaint among the inmates, which is that of constipation.

The foods served in the hospital, or what is known as the convalescent or hospital dining room, are more varied and better suited for those whose health is below par. A notation of the articles found upon the table in the hospital dining room on the first day of the investigation disclosed ten different articles of food, viz., mush, fried potatoes, prunes, sausage, tomatoes, bread and butter, cold meat, pickles and relishes, syrup, and one quart of milk to each person. This seems to indicate that a proper regard is taken for the welfare of convalescents or other inmates whose condition seems to warrant an increase of their diet, and the committee was assured by the warden and physician that where inmates from any cause seemed to be in a run-down condition they were allowed the hospital dietary.

The committee secured a representative bill of fare, covering ten days, which is served at the federal prison, and which is herewith appended marked as "exhibit B," for the purpose of comparison with the fare served in the Kansas Penitentiary. It is admitted that there is a greater variety of food served in the federal prison, and due to their excellent facilities for preparation and distribution, undoubtedly more palatable, but it is the opinion of the committee that the quality of the food products in the raw state is not any better than in the Kansas Penitentiary.

A showing of the total amount of food consumed for the year 1908 and the cost of each article is appended herewith as "exhibit C."

The use of galvanized iron and tin table and kitchen ware were exclusively is to be deprecated as not being utensils giving the best sanitary results, owing to dents, fissures and turned edges generally found in this ware, and being therefore difficult to be properly cleansed and freed from particles of food. The use of an ordinary grade of white porcelain tableware is certainly to be much preferred from a sanitary viewpoint, as well as for a general appearance of neatness and cleanliness, with its resulting uplifting effect upon the inmates of the institution.

WATER AND SEWAGE.

The water supply of the institution comes from points driven on the bank of the Missouri river. The water is pumped to a reservoir on the bluff near the river, from whence it runs by gravity to the Penitentiary buildings. An analysis of the water made at the University chemical laboratories shows it to be of good quality. At one time within the past two

years, the water supply not being abundant enough, it was necessary to draw direct from the river and from an adjacent creek. During this time all the water used for domestic purposes was boiled before being used, to avoid possible infection. Additional points, however, have been driven near the former source of supply, and at the present time there is an abundance of good water. There has been no history of an epidemic of typhoid fever in the institution for at least a number of years.

The sewage is taken care of by a complete system on the grounds and discharged towards the east into the Missouri river.

As soon as possible the present cells that are in use in the cell houses should be replaced by cells of modern construction, furnished with sanitary closets and lavatory facilities, and these would of course be connected with the sewage system, and would conduce very much to the comfort and convenience of the inmates. It was noted that the new cell house occupied by the women is constructed along these modern lines, and the result is very satisfactory.

HEATING AND VENTILATION.

The buildings are heated by steam from the central plant, and in the cell houses the heat is mostly supplied by a secondary system after passing over heated steam coils. The air in the cells is drawn out by means of an exhaust fan placed at the top of the building at one end. Each of the cells is connected by two six-inch pipes with this main exhaust air duct. The cells nearest the fan are better ventilated than those at a distance. A test of the air, which was made in a cell in the north cell house on the east side in the lower corridor, before seven o'clock in the morning and shortly after the two occupants of the cell had left, showed the air to be of good quality; nearly as good as the outside air. An appreciable current of air was felt, even at the back part of the cell. A test of the ventilation was also made in a dark cell in which it might be presumed that the ventilation would be cut out by reason of the grated door being closed. A lighted match held at the opening of the exhaust pipe showed a strong current of air which was drawn through the pipe, as was indicated by the direction of the flame and the smoke carried in a horizontal direction to the pipe. The boarded door has numerous small holes through which the air readily finds access to the cell.

The dining room is not spacious enough for the large number of men who must be admitted. In a crowded condition it will seat about 800. On account of the low ceiling and the lack of force draught, it is necessary to open the windows to produce partial ventilation.

Dust conveyors have been installed in some of the shops, which policy should be extended so as to make the air as nearly dust-proof as is possible under present conditions.

MINE VENTILATION.

Special attention was paid to the ventilation of the coal mines, as about 400 men work here for eight hours daily. In order to sweep out of the mines the carbon dioxide and other dangerous gases resulting from the combustion by lamps, respiration of men and mules, shooting blasts, and also to remove the gases which always escape in greater or less quantities into a mine from the adjoining strata, a strong current of air must be continually driven through the mine by means of a fan blower.

In this mine ventilation is effected by the use of an eighteen-foot exhaust fan, running at the rate of ninety revolutions per minute. This exhausts the air through one shaft and air rushes in to take its place through the other shaft. By a suitable arrangement of doors the current of air is directed into every part of the workings. The velocity of air current was in no place less than 130 feet per minute, and at the bottom of the shaft 700 feet per minute.

There are various impurities in the foul air that comes from the mines that render it unsuitable for respiration by men and animals. The most abundant of these impurities is usually carbon dioxide gas, and on this

account tests were made for this gas in various parts of the mine, as it is an index of the impurity of the air. The tests were as follows:

No. 1. Return air current containing all impurities near the upcast shaft. Velocity, 500 feet per minute; 20,800 cubic feet of air were delivered per minute; temperature of air, 72 degrees F. This air contained 0.25 of 1 per cent of carbon dioxide gas.

No. 2. Abandoned No. 8 entry. Return current from the northeast portion of the mine; temperature of the air, 78 degrees F. This sample contained 0.27 of 1 per cent of carbon dioxide gas.

No. 3. Twelfth entry, east of No. 48 crosscut. Sample taken about 6000 feet from the downcast shaft, just before the air reaches men who are working at the face. Velocity, 150 feet per minute; 6500 cubic feet of air per minute were delivered, at a temperature of 71 degrees F. This air contained 0.14 of 1 per cent of carbon dioxide gas.

No. 4. Sample of air taken on the face, twelfth entry, sixth division, northeast of No. 48 crosscut. Temperature of air, 71 degrees F. This sample contained 0.18 of 1 per cent of carbon dioxide gas. This sample represents the air as actually supplied to the men who are mining coal.

No. 5. Sample taken on the face, north side, near main air passage. The air had traveled about 5500 feet from the foot of the shaft. Temperature, 71 degrees F. This sample contained 0.10 of 1 per cent of carbon dioxide gas.

Comparing these figures with those reported for ordinary mines, viz., 0.78 of 1 per cent of carbon dioxide, or for a badly ventilated mine, 2.73 per cent, we find the air to be satisfactory, and the mine well ventilated.

In this connection it may be stated that although there are mules stabled in the mine there is no appreciable odor of the stables in the vicinity.

It is fortunate that in this mine there is so little fire damp that the men usually work with naked lights. Precautions are taken, however, to avoid the accumulation of fire damp, and the fire boss goes through the mine in the morning before the men are sent down to work in order to see if there is any portion of the mine in which there are dangerous or explosive gases.

HOSPITAL AND SICK CALL.

The hospital facilities and hospital equipment are absurdly inadequate. An institution housing so many people as the State Penitentiary should be equipped with a modern hospital with modern facilities, a portion of which should be so constructed as to provide isolation and care for contagious and infectious diseases. In this particular the Kansas Penitentiary is woefully lacking. In addition to the general hospital there should be a tuberculosis pavilion, which in the judgment of the committee should be located outside of the present enclosure, to secure freedom from the dust, smoke, and the noise of the manufacturing industries. Warden Haskell is to be highly commended in that he has caused to be erected a tuberculosis tent with a cement floor, and suitably provided in other respects, in which are kept the advanced tubercular cases. This tent, however, is already overcrowded, and in cold weather its ventilation is inadequate. The record of the prison physician shows that approximately two-fifths of the inmates of the institution have a history of one or both parents having died of tuberculosis, which would seem to indicate that there is a considerable portion of the inmates peculiarly susceptible to this disease. Dr. Julius B. Ransom, of New York, speaking at the International Congress on Tuberculosis, held at Washington recently, gave expression to the following facts:

"The significance of tuberculosis as a factor in crime is not fully determined, though the large percentage of tuberculous cases in prisons, and the fact that most of these cases come from the infected areas of population, would indicate tuberculosis to be more or less closely allied to crime.

"The tuberculous prisoner represents one of the greatest physical menaces to the general social order. A realization of this fact and special

work in this direction are essential to the well-being of the community at large. The necessity for a law making mandatory the examination of every prisoner admitted to every penal institution is absolute.

"The history of the tuberculosis work at Clinton Prison illustrates the advantageous results obtainable from the special treatment of the tuberculous incarcerated criminal; statistics covering the past fifteen years showing a decrease of seventy-one per cent in the tuberculosis death rate in the prisons of New York."

The committee recommends, therefore, that a thorough scientific examination be made of all the inmates in the Penitentiary, in order that those affected with tuberculosis may be segregated, and that the legislature provide for a tuberculosis hospital or pavilion that may meet the requirements of the institution.

A member of the committee had the opportunity of being present at the sick call held shortly after six o'clock each morning, and on this occasion about 150 men responded to the call. This number did not include those already in the hospital wards. While an actual record of the time was not kept, it is the committeeman's impression and belief that not to exceed forty minutes were consumed in examining and prescribing for these men, not taking into account those who were thought to be shamming and were ordered to pass on, and about twenty who were ordered to drop out of line and be taken to the hospital for further examination. It is the opinion of the committee that an accurate and scientific examination and diagnosis cannot be made of this number of men in that period of time, and there is liable to be serious error in judgment from such wholesale prescribing.

A visit to the federal prison, where the same committeeman was privileged to be present at the sick call, disclosed the fact that over twice this length of time was consumed in the examination of about fifty men. It is to be remarked, however, that the conditions surrounding these two institutions are markedly different. In the first place, the large number of men in the Kansas Penitentiary, with the lack of facilities hitherto spoken of, and without any medical assistants, requires the attending physician to work rapidly in order that the day's work before him may be accomplished. It was found that the surgical and other instruments of precision used by the doctor were his own property—that the state furnished almost nothing along this line; and with the munificent salary of \$1400 a year, it certainly cannot be expected that the prison surgeon could afford to spend very much in the equipment of his office and the hospital. In comparison to these conditions, the federal penitentiary is supplied with modern equipment, abundant assistants, and everything to care for the sick of that institution. It is urgently recommended that the salary of the prison physician be increased to something like an adequate compensation for services required to be rendered, which will attract competent men, and that he be supplied with necessary modern instruments and appliances for treating the sick of the institution. It is also recommended that the medical department of the State University be allowed one or two internships, by which means valuable and up-to-date assistants may be supplied to the medical department at a small cost, and the medical school strengthened by the addition of these clinical facilities offered to her selected graduates.

It would seem to be impossible for any person or committee to make an accurate judgment as to whether or not the condition of the inmates had improved by merely looking at them. If it was pointed out that this man or that man was pale and did not look well, it would be necessary to know the physical condition of that person at the time he was admitted before a relative estimate of his present condition could be made. It is to be noted that the occupation of the men, a large proportion of whom work in the mines and factories, is of such a nature as to bleach them, and while a superficial observer might be of the opinion that the majority were pale, it is the belief of the committee that this presumed paleness is not due to anemia or subnormal condition of health, but rather due to the

fact that they are in the direct rays of the sun but a few minutes each day.

It was thought there was only one method by which anything like an accurate determination might be made as to whether or not the physical condition of the inmates had improved after their reception into the institution. It was therefore determined to weigh a large number of men and compare their present weights with that when received into the institution. Accordingly, without the knowledge of the warden or any of the officers as to the purpose, groups of men were taken without selection from the various parts of the Penitentiary, and from the various industries there represented, the total number weighed being 100. These men were taken as they came in the division, with the single stipulation that no one who had not been there at least six months should be taken, for it was thought that that length of time should have elapsed before the influence of the food and sanitary surroundings would have had its full effect, detrimental or otherwise. The names, dates of admission, ages, where employed, color, weights when received, and the present weights, are appended herewith as "exhibit D." Owing to the fact that the Bertillon system of examination of inmates was not instituted until three years ago, it was found that those who were weighed who had been inmates for a longer time than three years had no record of their weight when received, and thus the space recording that fact is left blank; and it might be incidentally remarked that this shows there was no attempt at selection. Out of the 100 weighed we find that 66 had a recorded weight when they were received, and out this number there were but 9 whose weight at the present time is less than when they entered the institution, and of this number 3 are only one pound less, 1 two pounds less, 2 four pounds less, 1 twelve pounds, 1 fourteen pounds less, and 1 nineteen pounds less. Two give a record of remaining at the same weight. All the remainder show a marked increase. It should also be noted that only one of those showing a decrease in weight is among the miners, and this is a decrease in weight of from 210 pounds at the date of admission to 191 pounds at the present time, which seems to indicate nothing more than a good working condition. The man showing the fourteen-pound decrease in weight works upon the road, and the man showing the twelve-pound decrease works in shop No. 12. The apparent cause of this decrease has not been investigated by the committee at this time.

The total weight of the sixty-six prisoners who have a recorded weight at the date of entrance was 10,049 pounds; their total weight at the present time is 10,625 pounds, making an average net gain of 574 pounds, or 8.7 pounds per prisoner.

Altogether, the fact seems to be incontrovertible by these actual figures that the sanitary conditions and the food supply are of such a nature as to markedly increase the healthful condition of the inmates of the Kansas Penitentiary.

The warden has furnished the committee a statement of the amount of food consumed by the inmates for 1908. From this statement the fuel value of the food has been calculated for the entire period, and amounts to 4326 calories per day per man. This is somewhat above the average amount required for the average man under ordinary conditions. The nutritive ratio, or the ratio of the proteids to other nutritive values of the food, is as 1 to 8, an amount which agrees very well with values found in foods used in any community in outside life. The cost of the food, including the Penitentiary farm products at market prices, is 11.5 cents per day per capita.

Signed. S. J. CRUMBINE, M. D.
E. H. S. BAILEY.

THE CONDITION OF THE MINES AND MINE LABOR.

The physical condition of the mine is good, both as to sanitation and general safety. The amount of coal required of each prisoner per week is not excessive. Each man is required to

mine three car-loads, or about one and one-half tons per day. In free mines three tons per day is considered an ordinary day's work. The condition of the miner is better than that of the average free miner. The charges that the mine is unsafe and unsanitary and that excessive demands are made of prisoners are unfounded. When a green hand is sent into the mine he becomes a helper and is allowed two weeks to learn the business before he is required to produce his amount of coal. So far as can be ascertained the guards in the mine are not cruel task-masters. However, there have been instances when young men have been sent to the mine who have found it very difficult to complete the daily task of coal. These have usually been removed to other occupations aboveground. In looking over the punishment for three years very few prisoners have been punished for failure to mine the required amount of coal, and these are usually designated on the report as "refused" to mine the required amount.

The public in general have a dread of going underground, and would have a much greater dread of working underground. But the practical free miner prefers to work in a mine rather than aboveground. There is a marked difference between the condition of the free miner and the prison laborer, in the fact that the former may return to his family or friends above ground. This relieves the situation somewhat. But there are many prisoners who prefer to work in the mine to any other kind of labor. An examination of the physical conditions of the men working in the mines reveals the fact that mining at the Penitentiary is a healthful occupation. Of course, many prisoners have a horror of it, and among these are men who have a horror of all systematic work and discipline of every kind. They are the class that have most to say about hard labor, cruel punishment and inhuman treatment.

Much has been said about the immorality in the mine. It is true that this exists to a considerable extent, but the same immorality is practiced aboveground. There is doubtless greater opportunity for immoral practices in a poorly lighted mine than in a well-lighted shop or in the open air and sunlight. It must be remembered that a considerable number of the prisoners are excessively immoral, some even to beastliness. But these are condemned and abhorred by the better class of prisoners as well as by officers. Theoretically, your committee would say that plenty of sunlight is at least a good environment for reform. They believe that the time may come when the mine will not be worked by prison labor. In the meantime, renewed vigilance should be exercised in the selection of the men sent to the mine, and especially in the character and mining experience of the officers who direct the men in the mine. Only experienced miners should be guards or officers in the mine. While as a general reform agency the mine may not be ideal, it is not best to spend too much sympathy on hardened men

who are forced to work at hard labor in the mine. A certain mine officer, a kind-hearted man, has even gone so far as to help the weaker prisoners to get out the required amount of coal, and as a reward for his kindness he had a pick driven into his side by a vicious miner.

The following report is on the material and sanitary condition of the Penitentiary mine, by Mr. Frank Gilday, state mine inspector and a mining expert of note:

I herewith hand you my finding of the condition of the coal mine.

The machinery and ropes in use for hoisting and lowering the men out of the main coal shaft are in first-class condition. The engine is 500 horsepower, 24 x 48 cylinder, with a 12-foot drum. There is used 1½-inch steel rope. The boilers are looked after by the engineer. He has them cleaned out every two weeks. The combined strength of the boilers is 280 horsepower. The engineer has had thirty-six years' experience, and looks after the machinery very carefully. The safety-catches on the cages are in good shape; I feel sure they would catch and hold the cage if the rope broke. The cages are built solid, with 3-inch oak floor and coverings of the same material; six guides for each cage, which hold it very steadily, ascending or descending. There is a 2 x 4 running along each side of the cage for the men to hold to. The shaft is 15 x 9½ feet, and is 720 feet deep, well timbered with 6 x 6 cypress where the shale strata are, and 3 x 6 oak where there is lime rock. This being an old mine, well settled, and part of it having stood without timbering until recently, I do not anticipate any squeeze or creep, but I suggest that heavier timber be used when the shaft is retimbered. This will be done when the timbers which are now in there begin to decay, and at present the shaft is safely timbered.

The bellling system used is different somewhat from that which is in use at other mines, as there is no back bell given here when the men are being hoisted out of the mine, but the engineer is notified that men will be hoisted by receiving two bells. Then he knows that men will be hoisted continually until they are all out. An electric bell is used, and also a wire bell as a precaution in case of accident to the electric bell. There is a man on top who looks after the signaling, and one at the bottom. I questioned the men closely about the mode of signaling. They understood it well. When the man on the bottom signals the engineer by ringing the bell, the bell at the top of the mine also rings. The bells ringing at both places makes it more safe. It is of great importance that they understand the mode of signaling, as the lives of the men being lowered and hoisted depend to a great extent on those men being careful in bellling the engineer to start and stop. I approved the system and the careful way the signaling is being done.

Electric lights are used in the bottom of the mine and back about 400 or 500 feet. There is also a telephone run down into the mine.

The entire sump around the bottom of the mine is well timbered, and everywhere in the mine where it was necessary to timber the roadways it has been done. The roadways leading in to the working face are in good condition, with no loose rock hanging on them. I did not see one rock that I considered dangerous on the roadway. There are places where the timbers have been taken out and the loose rock which was over them taken down. The uprights were left standing at the sides of the roads, with about twenty-five or fifty pounds of dirt on top of them. I knocked four of them out to demonstrate to some of the men who are mining there, and have not had any practical experience in mining, that these old decayed uprights on the side of the entry did not indicate that the roadway was dangerous. The miners working at the face must timber their own places. Usually they work two in a place. The man with the most experience does the timbering. Generally the roof is very safe and easy to hold up.

After going around the mine for two days, in the various roadways,

air-courses, and crawling along the face, I did not see any water except a couple of pools with about a bucketful in each pool. It is a very dry mine.

The coal vein is twenty-two inches in thickness, varying two or three inches in some places. It is worked on the advancing long-wall plan or system; that is, all the coal is taken out as the working face is driven in, and no pillar of coal is left in the mine. The face is worked in a circle. The miner digs out the fire clay beneath the coal, throwing it behind him. This fire clay, along with the slate which he takes down to make his roadway, fills up the space where the coal was taken out, thus holding up the roof in place of the coal. The space the miner works in is about two and one-half feet high, and there is about three feet of space from the coal back to the gob or wall which he builds. Each man working alone is supposed to dig and load three cars of coal per day, and each car holds twelve and one-half bushels of coal. This is called his task. Two men working together are supposed to load five cars a day, and three men working together seven cars of coal. A new beginner gets two weeks in which he is supposed to get out one car a day, and works with an experienced man. This information was furnished me by the men working in the mines.

There is a little marsh gas in the mine, but not enough to stop the men from working with naked lights, except in places where the top is broken in, thereby blocking the air current in such manner that it cannot sweep out the gas which accumulates. This kind of place is worked by the miner using a safety lamp. I found the marsh gas which accumulates in this mine comes from above from a stratum of slate and a small vein of coal ten inches thick, which is forty-three feet above the vein that is being mined, oozing out from a break or a crevice in the roof and accumulating in the high places in the roadways. The amount of gas generated is usually so small that the miner does not notice it. However, there are men known as fire bosses who examine the mine every morning for gas, and mark the day of the month of every man's working place. This shows they have been to each place, and if they find enough gas in there to be dangerous they put up a mark of danger by writing the word "dangerous" at the mouth of their room or roadway. This precaution is necessary, for no one can tell when a break or crevice in the roof will extend to a larger body of occluded gas than is generally met with. From reports given by the men, these examinations are carefully made every morning by the fire bosses before the men are allowed to go down into the mine. If an unusual amount of gas or fire damp is found, brattices are used to turn in a strong current of air on the gas to sweep it out before the men are allowed to go in. From all I could learn from the men who mine the coal, and many questionings of the officers of the mine, along with my examination of the mine, I am convinced that every precaution is taken to prevent an accumulation of gas or fire damp. I feel certain this mine will never generate enough marsh gas or fire damp to cause an explosion, but it should always be examined carefully by the fire bosses before the men go down, so as to protect them from getting burned by lighting the small quantities which do accumulate.

I talked to the men as I met them in the mines, asking them if the conditions were the same generally as they were at the present, and with one exception they said "yes." I talked to thirty of them at noon when they had congregated to eat their dinner. They told me a pusher's task was to push thirty-six cars per day about 200 feet. This was an easy task. Drivers, timber men, tracklayers, airmen, doormen and cagers all agreed that their tasks were not too heavy. They talked freely to me, telling me the rules which governed them, the condition of the mine; explained how they could get out of the mine if they were sick. I then crawled along the face, and in all that mine there was just one man who told me there was bad air in another part of the mine. I searched diligently for it, but did not find any bad air at the face.

I was in the intake air current at a distance of 50 feet from the

bottom of the main shaft. The air current passed along there at a velocity of 492 feet per minute; the area of the airway was 63 square feet. The volume of the air current was 30,990 cubic feet per minute. Going in on the northeast section of the mine, splitting at three east entry, the part going in the three east entry split again at the face. The air current going to the north met the air current which aired the extreme northeast section; both currents then returned in the same air course to the air shaft. These two currents close to the bottom of the air shaft showed a velocity of 520 feet per minute; the area was 40 square feet, the volume 20,800 cubic feet per minute. I then proceeded along this air course 6000 feet. The velocity at this point was 250 feet, the area 42 square feet, the volume 10,500 cubic feet per minute. The reason for the small amount of air at this point was that some of the air current was allowed to escape to keep the various roadways free from black damp. There were some other leakages that should have been stopped. Then I measured the extreme northeast air current, about 7000 feet from the bottom of the shaft, just before it reached the men. This point was close to the face, and showed a velocity of 150 feet per minute; the area was 42 square feet, the volume of air 6300 cubic feet per minute. There were sixty-five men to be aired by this current. I then proceeded to the last place on this air current. In thirteen entry, on the northeast section of the mine, the velocity at this point, which was in at the face, showed 190 feet per minute, area 11.25 square feet, volume 2137.5 cubic feet per minute. I then crossed to the other air current, on the twelfth entry, northeast section of the mine; measured the air at the face where the men worked; found a velocity of 600 feet per minute, an area of 5 square feet, the volume 3000 cubic feet per minute. Then I crossed to the three east entry on the north section of the mine; the velocity at the face was 130 feet per minute, the area 15 square feet, the volume 1950 cubic feet per minute. This was the slowest velocity of air current that I found at the face anywhere in the mine, but the air was sufficient. Then I traveled south about 800 feet, going with the air current through several divisions, measuring the air current at the face at five different points, and found the volume about the same at each point. Then I measured the east air current at the face on the last of the air. The velocity measured 160 feet per minute, area 42 square feet, the volume 6720 cubic feet per minute. At this point the air from the southeast section of the mine met the east air current. I measured the southeast air current on the last of the air, back of the face about 150 feet. The velocity was 60 feet, area 40 square feet, and volume 2400 cubic feet per minute. Then I measured the air current going along the working face; found the velocity 140 feet, the area 9 square feet, the volume 1260 cubic feet per minute. I then measured the two air currents where they met, about 150 feet from the face, and found 10,500 cubic feet to be the volume. Then I proceeded to the bottom of the air shaft. The velocity here was 700 feet per minute, area 70 square feet, and a volume of 49,000 cubic feet. Found a leakage from the main shaft of 500 cubic feet, which was allowed to escape to keep the roadway clear of black damp. I then measured the current of air going south within 50 feet of the main shaft. I found a volume of 12,600 cubic feet. In the measurements of the air at the intake and return air course, an allowance should be made for the increase in temperature and leakages. The measurements were taken in the morning at the intakes 50 feet from the bottom of the mine, and at six o'clock in the evening close to the bottom of the air shaft. This explains the different amounts registered by the anemometer.

The force or ventilating pressure used at this mine is an exhaust fan, eighteen feet in diameter, blades four and one-half feet, running ninety revolutions per minute. The principle of the exhaust fan is, the fan reduces the atmospheric pressure on the top of the upcast column by the removal of a portion of the air, thus causing a vacuum and a consequent movement of the air through the mine toward this point. When a portion

of the air is removed from the top of the upcast, the weight of the air in the downcast forces the air through the mine and up to the upcast to fill the vacuum, and as the fan by running keeps up this vacuum there is a constant movement of the air. From my inquiries from the men who mine the coal, I am convinced that the ventilation is always as good as I found it, and I therefore do not hesitate in saying that this mine is well ventilated.

On account of the small area of the air courses, which is the working face, and the long distance the air travels, becoming impure when breathed by so many men, I would suggest that not more than 300 men be employed in this mine at one time; and a further reason for reducing the number is that it crowds the men too much, forcing three of them to work together in one room and making it harder for them to perform their task. I would suggest further that practical miners be employed as guards, because an inexperienced guard may not have enough knowledge of mining to know what condition a place would have to be in before the man could be excused from getting out his full task. I believe to mine just enough coal to supply the Kansas State Prison would be a good reform, as it would have a tendency to reduce the number of men employed in the mine. At present there are 400. This is too many, as the condition of the air would be much more pure if the number were reduced. I inquired diligently if punishment was ever inflicted upon them in the mine. I did not learn of a single case.

The shale mine is drifted in off the air shaft at a depth of 150 feet, ventilated separately by a pipe leading down from the top. There are nine men at present working in this mine. It is worked on the room-and-pillar plan. There has never been an accident in this mine. The area of these roadways is about 170 square feet. There is an abundance of air for this number of men. The air shaft has cages and the men are hoisted out of this mine the same as the main shaft. The engine used is old and partly worn out, and should be repaired or replaced by a new one, and always kept in first-class condition, in case of an accident to the main shaft, so that the men could be gotten out of this shaft.

The changes I have suggested would bring this mine up to the best possible physical condition that could prevail in a mine. There never should be a question raised as to this mine's being dangerous, or the sanitary conditions bad. It should be an ideal mine, so far as danger to the men who are employed to mine the coal are concerned, for they are forced to go in there against their will. In the last nine years there have been only three men killed in this mine from accidents. This is a wonderful record, and when it is taken into consideration that so many men have been forced to go into this mine who never were in a mine before, it is very close to an ideal condition, so far as accidents are concerned.

Respectfully submitted,

FRANK GILDAY.

EDUCATION.

One of the best improvements made at the Penitentiary under Warden Haskell's administration is the night school. Previous to this the education at the Penitentiary consisted of two hours' schooling per week, on Sunday afternoon. This was of comparatively little value, for dull minds could not obtain educational momentum with this amount of help. The evening school would have much better results if the labor day was reduced to eight hours, so as to give prisoners in the school an interval of rest between the day's labor and the school hour.

STANDING OF THE KANSAS PRISON SCHOOL.

The total number of pupils enrolled January 1, 1909, in the Prison school at Lansing was 328. The average attendance for the month of December was 312. The enrollment shows 185

white and 143 colored. Their ages range from sixteen to sixty, the average being about twenty-seven years.

All the common-school branches are taught, the same books being used as are used in the common schools of Kansas.

There are twenty-three classes taking up the full curriculum of common-school studies, and in addition to this there is one class which makes a specialty of algebra, and one special class for teaching business penmanship.

There are 27 wholly illiterate; 62 in the first reader, 58 in the second reader, 45 in the third reader, while the other classes are about evenly divided.

Chaplain McBrian is the superintendent, and the teachers are all prisoners. It would seem that one or more regularly employed professional instructors would be a wise economy.

The library is small but well used. Its selection is not of the best, but it is interesting to note the number of books of science, biography, religion, travel, etc., that are read. There were 3982 bound volumes of books and 324 bound volumes of magazines in the library June 30, 1908. During the biennial period ending June 30, 1908, during which the library was closed two months, the number of books read was 90,693. Of these, 3104 were historical, 5005 scientific, 3160 classical, 3058 travel and adventure, and 34,418 light literature. This would compare favorably with an ordinary free town library. Your committee would recommend emphasizing the educational feature of the Penitentiary and urge increased facilities to this end.

RECOMMENDATIONS.

Your committee would offer the following recommendations, which may be of value to those who must deal with the future of the Penitentiary. While these recommendations may be suggestive of criticism of present conditions, they are given with the desire and full purpose to improve the condition and management of the Penitentiary, that the state of Kansas may have protection for her citizens and the reform of her evil-doers, that crime and physical and mental degeneracy may be lessened.

1. We recommend that as soon as possible the Oklahoma prisoners be removed from the Kansas Penitentiary.

2. That there should be better hospital facilities and hospital service.

3. That there should be increased medical attendance. That one or two graduates of the medical school of the University of Kansas should be given a year's internship at the Penitentiary.

4. That there should be a new hospital for the criminal insane, located outside and apart from the Penitentiary.

5. That a new tuberculosis pavilion be provided for the purpose of preventing the spread of this dread disease and cure of the afflicted.

6. That the excessive and increasing demand for coal by other state institutions shall not be a menace to the management, discipline and reform of the inmates of the prison, we recommend that the amount mined should depend upon the number of available men who would suffer no detriment by working in the mine, as determined by the judgment of the warden and prison physician.

7. That the system of contract labor be abolished and that all prison labor be conducted in plants owned by the state and directed by the administration of the Penitentiary.

8. That eight hours shall constitute a day's labor.

9. That the entire administration of the Penitentiary be removed from political influence. To do this, civil-service rules should apply to all appointments under the warden, and the rules should be of such nature as to raise the requirements of qualifications and efficiency of officers.

10. That the tenure of office of the warden should be during good behavior and efficient and progressive management.

11. That the warden should have full appointing power under civil-service rules, and that he be held responsible for the entire management, including the efficiency of all employees and officers.

12. That the entire official roll should be reorganized, efficient men being retained and the inefficient dismissed, to the effect that, added to other qualifications, only such individuals as are interested in reforming men as well as in controlling them should have a place among the officials and employees. It would be well to move the guards' quarters outside the administration building.

13. That proper relations may be established between the Penitentiary and the Reformatory, these two institutions to be placed under one board of directors, or else both be placed under the State Board of Control.

14. That a new kitchen, with new and modern appliances and equipment, be built, and that improved dining-room service be provided.

15. That in all future appropriations the amount for food be separated from the amount of the general appropriation for maintenance.

16. That the standard of diet be raised by an increased variety and by a better grade of cooking. That the service in the dining room be improved by less haste and by insisting that all waiters shall serve in clean jackets and aprons.

17. That only one person be kept in each cell.

18. That increased appropriation for educational purposes be made and the educational feature of the Penitentiary be increased, not only for the sake of reform but for economy. At least as much should be spent on education as on tobacco, for which latter article about \$3500 is appropriated annually.

CONCLUSION.

Your committee would again invite the attention of your excellency to the limited time allowed for this investigation and the circumstances under which they have labored. They are, without exception, very busy men, who have had other duties which could not be neglected, hence they have been obliged to draw on the future for time and energy for this investigation. They realize that there are many minor details that should have been inquired into and which would have been, could the committee have extended their investigation over a period of several weeks. However, so far as they have gone, they feel confident that this report truly represents the conditions at the State Penitentiary at Lansing.

The following resolution was adopted previous to adjournment:

Resolved, by the Kansas Committee, That, as in our report to Governor Hoch we condemned the use of the so-called "crib" and "water-cure" as punishment (the two having been destroyed at our request and in our presence), so, also, we condemn the shackling of prisoners by placing them face downward with their hands behind their backs, handcuffed and attached to their ankles by a chain. This punishment is known to the prisoners as "alkazan." We regard it as harsh and unnecessary, and we most urgently recommend that its use be forthwith and forever discontinued.

Respectfully submitted.

F. D. COBURN, *Chairman,*
F. W. BLACKMAR, *Secretary,*
CHARLES M. SHELDON,
S. J. CRUMBINE,
FRANK GILDAY,

Committee.

MINUTES OF THIRD QUARTERLY MEETING.

The Kansas State Board of Health met in quarterly session on March 7 and 8 at the office of the secretary in the state-house. The meeting was called to order by the president at 2:30 P. M. Upon roll call the following members were present: Dr. L. A. Golden, Dr. E. P. Mills, Dr. J. B. Garver, Dr. J. B. Carlile, Dr. H. M. Bentley, Dr. G. E. Locke, Dr. B. J. Alexander, Dr. C. H. Lerrigo, Dr. A. B. Scott and Mr. C. D. Welch. All the advisory members were present except Professor Marvin.

The regular order of business was taken up and the minutes of the last meeting were read, approved, and ordered placed on file.

The application for the disinterment of the body of Harold Hart, who died of diphtheria on the 23d of February, 1888, from Granada township, Nemaha county, to be shipped and reinterred in Wetmore, Nemaha county, Kansas, was granted.

Doctor Mills then made a report of the visit of the committee to the Hutchinson Reformatory, which was received and ordered placed on file. The report follows:

To the Members of the State Board of Health:

GENTLEMEN—In compliance with the resolution adopted at the last meeting of the board concerning the inspection of state institutions, Doctor Carlile and myself visited the State Reformatory at Hutchinson on a recent date. The Reformatory is built of stone on the general plan of administration building, behind which is a court and off from the court the cell rooms. This administration building and two of the cell wings were built by contract. At the present time the Reformatory yard is being enclosed by a massive stone wall, and another cell wing is being built entirely by the boys in the Reformatory. At present the exercise room is in this enclosed court, but after the wall is finished they will have a large parade ground and an opportunity for much more outdoor drill and exercise.

The buildings and all the surroundings are scrupulously clean and the usual jail or prison smell was very noticeable by its absence.

About the only suggestion Doctor Carlile and myself had to make, from sanitary grounds, about anything we saw, was in connection with the bathrooms, and Mr. Marshall, the superintendent, informed us that they were expecting sufficient money from this legislature to enable them to provide suitable bathroom facilities; that one of the rooms now being used on the second floor as a shop will soon be vacant and it is their purpose to install the baths there.

Another defect which we were assured would be corrected immediately was that the closet in connection with the kitchen, and used by the boys employed in the preparation of food, was totally unprovided with any facilities for washing the hands after using the toilet, and we suppose by this time a wash-sink has been put in and provided with soap and towels.

The health of those employed seemed to be excellent. There have been very few cases of contagious diseases within the last few years, and at present there is only one case of tuberculosis and that of the nonpulmonary variety. The present authorities have adopted this plan: In dealing with tuberculosis cases, as soon as any case is definitely diagnosed as tuberculosis, if they have any friends to take care of them they are paroled; but this one boy is absolutely alone, with no one to provide for him, and his last days are being made as comfortable as possible, he having a room and all toilet articles for himself, and is kept there.

The state at large is certainly to be congratulated on the workings of this institution, for the statistics that have been kept since its inception clearly show that it is of really a reformatory character, and that the boys who get into trouble and are sent there learn a trade and are given a chance and incentive to leave there and take their place again with the world and lead useful lives; and the present management is to be commended in the scrupulous cleanliness and the general good conduct of the institution.

Respectfully submitted.

EARNEST P. MILLS.
J. B. CARLILE.

Doctor Bentley introduced the following resolution, which was unanimously adopted:

WHEREAS, The resignation of Dr. E. P. Mills from the Kansas State Board of Health, necessitated by his removal to Ogden, Utah, has been received; and

WHEREAS, Doctor Mills has been for four years a most efficient member of this body: Therefore, be it

Resolved, That the Kansas State Board of Health receive the resignation of Doctor Mills with genuine regret, and most heartily recommend

him to the medical fraternity of Utah, and request that the Utah State Boards of Health and Medical Registration show him every courtesy within their power to facilitate his registration in their state, and that a copy of these resolutions be forwarded to the secretaries of the boards of Utah.

Doctor Lerrigo then introduced the following resolution, which, upon motion, was unanimously adopted:

WHEREAS, Miss Bernice Vreeland has been an employee of this department for a number of years, and has shown unusual ability in the work of the department; and

WHEREAS, By this long service she has become very familiar with all the routine work and details of the office: Therefore, be it

Resolved, That as a mark of appreciation of this service she be hereby advanced to the position of clerk and stenographer, recently provided for by the legislature, at a salary of \$900 per annum.

Upon motion, the secretary was instructed to select a stenographer for the office.

The secretary's quarterly report was then read and upon motion was ordered placed on file.

Professor Sayre then offered the following resolution, which, upon motion, was adopted:

Resolved, That the State Board of Health be advised that it confer if necessary with the chancellor and board of regents of the University and the president and board of regents of the Agricultural College, setting forth the immediate necessity of providing for ample and sufficient laboratory facilities and service in executing the analytical work necessary in carrying out the provisions of the Kansas food and drugs act.

Upon motion of Doctor Mills, the following committee, namely, Prof. F. O. Marvin, chairman, Professor Bailey, Professor Willard, Mr. Welch and Doctor Crumbine, was appointed to prepare such blanks and forms as are necessary to put into immediate effect certain provisions of the new water and sewage law, and report such further plans and policies as seem necessary, at the next quarterly meeting.

The secretary then presented correspondence from the Lederle Laboratories concerning the distribution of antitoxin, and upon motion a committee—Doctor Lerrigo, Professor Sayre, and the secretary—was appointed to investigate the matter and report at the next quarterly meeting.

Upon motion, adjournment was taken until 7:30 P. M.

The Board reconvened at 7:30, and the appointment of inspectors was taken up, and Mr. Harry Bell, of Kansas City, Kan., was elected food inspector.

Rules and regulations which had been prepared by the food and drug analysts and the secretary were then presented and read, by section, for amendment and debate. At 10:30, the rules not having yet been entirely gone over, adjournment was taken until nine A. M. the following day.

MARCH 8.

The Board reconvened at nine A. M., with all the members present, and the matter of the adoption of the rules and regulations was continued; whereupon, as finally amended, the rules, upon a motion and vote, were adopted, the following members voting aye: Dr. L. A. Golden, Dr. J. B. Carver, Dr. J. B. Carlile, Dr. B. J. Alexander, Dr. H. M. Bentley, Dr. G. E. Locke, Dr. A. B. Scott, Dr. C. H. Lerrigo, Dr. E. P. Mills, Mr. C. D. Welch.

The remainder of the food inspectors and the drug inspector were balloted on, with the following results: John A. Kleinhans, Topeka, and A. G. Pike, Fort Scott, food inspectors; A. H. Roby, Stafford, drug inspector.

Upon motion, the secretary was given authority in case of a vacancy in the position of food or drug inspector to make an appointment until the next meeting of the Board.

The following bills were audited and allowed:

| | |
|----------------------|---------|
| L. A. Golden..... | \$36 10 |
| A. B. Scott..... | 43 50 |
| J. B. Carver..... | 30 00 |
| E. P. Mills..... | 16 50 |
| B. J. Alexander..... | 18 10 |

Upon motion, the Board adjourned.

SECRETARY'S REPORT.

To the Members of the State Board of Health:

The general health conditions throughout the state for the past three months have been about normal as compared with the same months of other years, except in the case of diphtheria, which shows somewhat of an increase during the month of December over that of previous years, with the exception of 1905, and a corresponding decrease in the case of small-pox as compared with the past six or eight years. There were 102 cases of typhoid fever reported for December and 65 cases for January. This is also a slight increase over the reports of similar periods in other years.

The continuance of typhoid fever during all portions of the year in such numbers is sufficient to attract our attention and arouse our apprehension as to the cause of this continued fever, which was formerly supposed to occur only in summer and autumn months. The increasing contamination or pollution of sources of water supply can be the only rational explanation of the continuance of this infectious disease in the colder weather, for at this period of the year the fly must be ruled out as a carrier of this disease; therefore, our attention must be focused, and preventive measures applied to a solution of the water problem in these infected centers.

The present legislature has passed a law charging the State Board of Health with the sanitary control of the natural waters of Kansas, including sanitary supervision of waterworks and sewage systems. This new law imposes a very responsible and weighty problem upon the shoulders of the Board, and one to which I invite your special consideration at this session. The law itself provides that within sixty days after the passage of the act every water company, whether private or municipal, shall file plans and specifications of such company's plant, and within ninety days every sewer company shall file the plans and specifications of such sewer with this Board for their approval. The sources of water

supply are supposed to be studiously studied by the Board; and the extent of the contamination of streams into which the sewage is emptied, without treatment, by the various cities, is supposed to be made a study by the Board, and such steps taken as to protect the natural waters of the state and prevent the spread of water-borne diseases.

It is suggested that this Board indicate by instruction its policy concerning such scientific aids as are necessary for putting into force this act, and such other instructions to your secretary and our sanitary adviser and engineer, Professor Marvin, as seem to be necessary to fully and completely carry out the purposes of this act. The new law reads as follows:

"AN ACT to preserve the purity of the waters of the state, for the protection of the public health, prescribing duties of the State Board of Health in relation thereto, and providing penalties for the violation of the provisions herewith.

"Be it enacted by the Legislature of the State of Kansas:

"SECTION 1. That the term 'waters of the state,' wherever used in this act, shall include all streams and springs, and all bodies of surface and of impounded ground water, whether natural or artificial, within the boundaries of the state.

"SEC. 2. Every municipal corporation, private corporation, company and individual supplying or authorized to supply water to the public, within the state, shall, within sixty days after the passage of this act, file with the State Board of Health a certified copy of the plans and surveys of the waterworks, with a description of the source from which the supply of water is derived; and no additional source of supply shall thereafter be used without a written permit from the State Board of Health, as hereinafter provided.

"SEC. 3. No municipal corporation, private corporation, company or individual shall construct waterworks for the supply of water to the public within the state, or extend the same, without a written permit, to be obtained from the State Board of Health, if in its judgment the proposed source of supply appears to be not prejudicial to the public health. The application for such permit must be accompanied by a certified copy of the plans and surveys for such waterworks, or extension thereof, with a description of the source from which it is proposed to derive the supply; and no additional source of supply shall subsequently be used for any such waterworks without a similar permit from the State Board of Health. When application shall be made for a permit under either of the above provisions of this section, it shall be the duty of the State Board of Health to proceed to examine the application without delay, and as soon as possible it shall make a decision, in writing; and, within thirty days after such decision, the corporation, company or individual making such application may appeal to the district court of the county, and said court shall, without delay, hear the appeal, and shall make an order approving, setting aside or modifying such decision, or fixing the terms upon which said permit shall be granted. The penalty for failure to file copies of plans, surveys and descriptions of existing waterworks within the time hereinbefore fixed, and for the construction or extension of waterworks, or the use of an additional source of supply, without a permit from the State Board of Health, shall be five hundred dollars, and further penalty of fifty dollars per day for each day that the works are in operation contrary to the provisions of this act, recoverable by the state, at the suit of the State Board of Health, as debts of like amount are recoverable by law.

"SEC. 4. No person, company, corporation or municipality shall place, or permit to be placed, or discharge or permit to flow into any of the waters of the state, any sewage, except as hereinafter provided. But this act shall not prevent the discharge of sewage from any public sewer system owned and maintained by a municipality or sewerage company, provided such sewer system was in operation and was discharging sewage

into any waters of the state at the time of the passage of this act. But this exception shall not permit the discharge of sewage from the sewer system which shall be extended subsequent to the passage of this act. For the purpose of this act, sewage shall be defined as any substance that contains any of the waste products or excrementitious or other discharges from the bodies of human beings or animals.

"SEC. 5. Upon application duly made to the State Board of Health by sewerage companies or by the public authorities having by law the charge of the sewer system of any municipality, the governor of the state, the attorney-general and the secretary of the State Board of Health shall consider the case of such a sewer system, otherwise prohibited by this act from discharging sewage into any of the waters of the state, and whenever it is their unanimous opinion that the general interests of the public health would be subserved thereby, the secretary of the State Board of Health may issue a permit for the discharge of sewage from any such sewer system into any of the waters of the state, and may stipulate in the permit the conditions on which such discharge may be permitted. Such permit, before being operative, shall be recorded in the office of the recorder of deeds for the county wherein the outlet of the said sewer system is located. Every such permit for the discharge of sewage from a sewer system shall be revokable, or subject to modification and change, by the State Board of Health, on due notice, after an investigation and hearing, and an opportunity for all interested therein to be heard thereon being served on the sewerage company or on the public authorities of the municipality owning, maintaining or using the sewage system. The length of time after receipt of the notice within which the discharge of sewage shall be discontinued may be stated in the permit, but in no case shall it be less than one year or exceed two years, and if the length of time is not specified in the permit it shall be one year. On the expiration of the period of time prescribed, after the service of a notice of revocation, modification or change from the State Board of Health, the right to discharge sewage into any of the waters of the state shall cease and terminate; and the prohibition of this act against such discharge shall be in full force, as though no permit had been granted; but a new permit may thereafter again be granted, as hereinbefore provided.

"SEC. 6. It shall be the duty of sewerage companies and of the public health authorities having by law charge of the sewer system of every municipality in the state from which sewage was being discharged into any of the waters of the state at the time of the passage of this act to file with the State Board of Health, within four months after the passage of this act, a report of such sewer system, which shall comprise such facts and information as the State Board of Health may require. No sewer system shall be exempt from the provisions of this act against the discharge of sewage into the waters of the state for which a satisfactory report shall not be filed with the State Board of Health in accordance with this section.

"SEC. 7. The penalty for the discharge of sewage from any public sewer system into any of the waters of the state without a duly issued permit, in any case in which a permit is required by this act, shall be five hundred dollars, and a further penalty of fifty dollars per day for each day the offense is maintained, recoverable by state at the suit of the State Board of Health as debts of like amount are recoverable by law. The penalty for the discharge of sewage from any public sewer system into any of the waters of the state without filing a report, in any case in which a report is required to be filed, shall be fifty dollars per day, recoverable by a like suit.

"SEC. 8. All individuals, private corporations and companies that at the time of the passage of this act are discharging sewage into any of the waters of the state may continue to discharge such sewage unless, in the opinion of the State Board of Health, the discharge of such sewage may become injurious to the public health. If at any time the State

Board of Health considers that the discharge of such sewage into any of the waters of the state may become injurious to the public health it may order the discharge of such sewage discontinued.

"SEC. 9. Every individual, private corporation or company shall discontinue the discharge of sewage into any of the waters of the state within ten days after having been so ordered by the State Board of Health.

"SEC. 10. Any individual, private corporation or company that shall discharge sewage, or permit the same to flow, into the waters of the state contrary to the provisions of this act shall be deemed guilty of a misdemeanor, and shall upon conviction be punished by a fine of twenty-five dollars for each offense, and a further fine of five dollars a day for each day the offense is maintained, or by imprisonment not exceeding one month, or both, at the discretion of the court.

SEC. 11. Any order or decision, under this act, of the State Board of Health, or that of the governor, attorney-general and secretary of the State Board of Health, shall be subject to an appeal to any district court of the county wherein the outlet of such sewer or sewer system, otherwise prohibited by this act, is situated; and said court shall have power to hear said appeal, and may affirm or set aside said order or decision, or modify the same, or otherwise fix the terms upon which permission shall be granted. But the order or decision appealed from shall not be superseded by the appeal, but shall stand until the order of the court as above.

"SEC. 12. All acts or parts of acts in conflict herewith are hereby repealed.

"SEC. 13. This act shall take effect and be in force on and after its publication in the official state paper."

Since the last meeting of the Board your secretary has, I think, put in the most strenuous three months that he has ever done in this office. Not only has the work been heavy, but the burden of looking after the various measures in which this Board was interested has fallen very largely if not entirely upon his shoulders, and I am glad to say that a sufficient number of bills have been passed to put the Board on a level and standing with most other state boards. Not only has the authority, power and scope of the Board been enormously enlarged and increased, but scientific and important problems have been left for your solution in which the public welfare is at stake. And naturally the appropriations have been increased; not, I am sorry to say, commensurate with the added duties, but sufficient to enable the Board to go forward with new impetus and new life with the tasks set before it.

The most important measure of course that has passed is the food and drugs act. The interests involved in this bill are so widespread and so important as to call forth your best thought and deliberation in planning for the machinery and indicating the policy of administrative detail by which this most excellent measure may be put into effective operation.

When it is known that there are approximately 5000 groceries, about 1100 drug stores and about 50 wholesale and manufacturing plants, with a combined capital in actual investment representing many millions of dollars, on the one hand, and on the other the vital interests of 1,800,000 consumers who are supposed to have protection from fraudulent and unwholesome products, the subject appeals to one as being almost revolutionary in its character. I am sure you will agree with me that it is no idle task, nor one that can be approached without the most profound thought and a sense of the complex and apparently conflicting propositions which it offers, and I trust that the Board may take all the time that seems to be necessary before its adjournment in putting into operation such rules and regulations and the selection of such inspectors as may give to the state of Kansas the best, most efficient and most popular law that has been passed by this session of the legislature.

We have spent many days, two of which have been in conference with our three analysts, in framing and reframing suitable rules and regulations which would seem to be proper to adopt in making this law effective, and which the legislature has given us the specific authority to do. These

rules and regulations are herewith submitted as a portion of this report, for your approval after such amendments and suggestions as you see fit to make.

It is suggested, inasmuch as there are thousands of dollars' worth of goods upon the shelves of the wholesaler and retailer that are under the present law illegal, that the Board adopt the policy of giving a reasonable length of time for the disposal of such goods as are only technically illegal, of course prohibiting the sale of such articles as are unwholesome or injurious. If the Board sees fit to adopt such policy, it is suggested that the inspectors be instructed on their first visit to hold what might be called a school of instruction with dealers, pointing out to them such goods as are on their face illegal, answering such questions as are proper for them to answer, and giving them general sanitary instruction as to the conduct of their business along those lines. This will give dealers an opportunity to adjust their stocks and themselves to the new condition without demoralizing trade conditions and at the same time protecting the consumer.

It can be readily seen, also, the importance of having the most competent men which this Board can appoint to fill these places as inspectors, for if they are to follow out the policy above outlined, namely, that of instructing on their first visitation, it follows that they must be informed in their subject and be able to answer all reasonable questions that may be put to them by proprietors. If men who are poorly equipped are sent upon the road to inspect these vast commercial enterprises and to instruct their owners or their agents in matters of the law, and are not eminently qualified for such instruction, the State Board of Health will become a laughing stock and the law itself brought into disrepute and a clamor for its repeal be made, so there is not only the greatest necessity for its efficient enforcement, but these appointments are largely a matter of self-preservation of the Board itself, so that the greatest precaution should be used in the selection of inspectors.

Among the other bills that have passed the legislature and which are of vital interest and importance to this Board may be mentioned the bill preventing the sale at retail of poultry, game and fish that have been kept in cold storage undrawn. This same bill provides for the proper covering of slaughtered meats while being transported from one place to another, or peddled, in order that they may be protected from flies, dust and other sources of contamination.

Another bill for which this Board has felt the necessity for many years is that giving them authority and power to abate nuisances. This law provides that upon the written notice of the State Board of Health, or any local board of health, the owners or occupants of any place where a nuisance is in existence shall at once proceed to the removal or abatement of such nuisance. Failure to do so makes a second offense punishable by a fine or imprisonment, or both, within the discretion of the court.

On February 8, the following telegram was received from Bird City: "Please send man to St. Francis to investigate smallpox. Go to Josiah Crosby, county attorney." Whereupon the president of the board was requested by telegram to go to St. Francis and investigate the conditions found there. Doctor Golden kindly consented to do this, and his report is embodied in the following letter:

"KENSINGTON, KAN., February 12, 1907.

"*Dr. S. J. Crumbine, Topeka, Kan.:*

"DEAR DOCTOR—After receiving your telegram of the 8th to go to St. Francis to investigate smallpox, I arrived there Sunday morning, after a long hard drive with team from Goodland to St. Francis, where I met the county attorney, Mr. Crosby.

"I found they are having an epidemic in their public school of chicken-

pox; this confined to children only. I also found smallpox in family of William Moore. Mrs. Moore, a woman about forty-nine years of age, has modified smallpox, perhaps a dozen small pustules. I have ordered this place quarantined.

"I also visited the home of Leonard Barton; found a girl of fourteen years of age, broken out in a mild form. I ordered this place quarantined.

"The county attorney, Mr. Crosby, I found a very capable man and will enforce the law.

"The doctors in St. Francis, Dr. J. A. Lamb and Dr. E. L. Waterman, both are afraid they will offend some of their patients or their friends to call it smallpox, and claimed to me it was not their duty but the county health officer's duty, Doctor Pegg, who lives in Bird City, Kan.

"The county attorney informed them it was their duty to post up the sign as soon as it was known it was a contagious disease.

Yours respectfully, L. A. GOLDEN."

No further complaint has been received from St. Francis, therefore it is presumed that conditions have been satisfactorily adjusted.

Several requests have been made for the secretary to go to other parts of the state in the matter of quarantine for smallpox. These matters have been adjusted through the respective county health officers, and as no further complaints have been filed it is presumed the various communities have received protection by quarantine measures that they asked for.

I desire at this time to bring to the attention of the board a plan that has been adopted by the State Boards of Health of Ohio and Minnesota, namely, that of the distribution of anti-diphtheritic serum through the State Board. While the State Board of Health has no fund for this purpose, the plan adopted by these two states might be arranged for in this state through the various county boards of health by laying the matter before them and having a sum voted for the purpose of distributing antitoxin free to the indigent poor of the several counties. The antitoxin can then be furnished from this department at very nearly cost, making a great saving to the counties and putting the State Board of Health in close touch and communication with the various epidemics of the disease, which have been rather widespread throughout the state this present season. These communications and this plan are laid before you with the recommendation that it meet with your approval, when the matter can be taken up with the county boards of health through correspondence.

In accordance with a resolution passed at the last meeting, the president has appointed the following committees:

Committee on Statehouse, Public Buildings and Charitable Institutions.—Doctors Lerrigo, Alexander, and Scott, and Mr. Welch.

Committee on Water Supplies and Sewage.—Doctors Carver, Locke, and Bentley, Mr. Welch and Prof. F. O. Marvin.

Committee on Embalmers, Barber and Epidemic Diseases.—Doctors Carlile, Coburn, Crumbine and Greenfield.

Committee on Adulterated Foods, Drugs and Drinks.—Mr.

Welch, Professor Bailey, Professor Sayre, Professor Willard, Mr. Deacon and Doctor Crumbine.

Finance Committee.—The President.

It is earnestly hoped that these new committees may be active working members and that the board will inaugurate an aggressive campaign of reform along the lines suggested in the names of these committees, by visitation to the state institutions and by giving the subject matter of the work their earnest thought and study. I beg to remind the board that the work of this office as now provided by law has become so heavy as to necessitate that every member be a working member in the broadest sense of the word. It follows, therefore, that much investigation and research should be taken up by the board in order that these important problems may have the mature thought of the members before final action is taken, as the various problems present themselves for solution. It is hoped that our appropriations may be so increased as to enable the board to accomplish these added duties and work.

Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary*.

RULES AND REGULATIONS.

[OFFICIAL.]

At a meeting of the Kansas State Board of Health held March 7 and 8, the following rules and regulations for the enforcement of the pure food and pure drugs law were unanimously adopted:

E. W. Hoch, Governor:

TOPEKA, KAN., March 9, 1907.

SIR—In compliance with section 3 of Senate bill No. 20, Laws of 1907, the Kansas State Board of Health have formulated the following uniform rules and regulations for the enforcement of the food and drugs law, approved by you February 14, 1907, and herewith submit the same for your approval.

S. J. CRUMBINE, M. D.,

Secretary for the Board.

GENERAL.

REGULATION 1.

Short title of act.

The act "to prevent the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and to regulate traffic therein, and providing for the appointment of inspectors for carrying out its provisions, and to provide penalties for violation thereof, and to repeal all acts or parts of acts in conflict herewith," approved February 14, 1907, shall be known and referred to as *The Kansas Food and Drugs Law* of February 14, 1907.

REGULATION 2.

Collection of samples.

Section 3.

Samples of original packages or broken packages of food, drugs or liquors shall be collected only by authorized inspectors of the department of health, or by any state or local health officer of Kansas, or by any official analyst.

The term "original unbroken package," as used herein, is the original package, carton, case, can, box, barrel, bottle, phial or other receptacle put up by the manufacturer, to which the label is attached, or which may be suitable for the attachment of a label, making one complete package of the food or drug article. The original package contemplated includes both the wholesale and retail package.

Samples may be purchased in the open market, and, if in bulk, the marks, brands or tags upon the package, carton, container, wrapper or accompanying printed or written matter shall be noted. The collector shall also note the names of the vendor and agent through whom the sale was actually made, together with the date of purchase. The collector shall purchase representative samples.

A sample of a broken package shall be divided into three parts, and each part shall be labeled with the identifying marks. All samples shall be securely sealed by the collector. If the package be less than four pounds, or in volume less than two quarts, three packages of approximately the same size shall be purchased and the marks and tags upon each noted as above. One sample shall be delivered to the party from whom purchased, or to the party guaranteeing such merchandise, and two samples shall be sent to such food or drug analyst as may be designated by the State Board of Health, one of which shall be held under seal by the said food or drug analyst.

REGULATION 3.

Analyses.

Section 4.

(a) When the examination or analysis shows that the provisions of the Kansas food and drugs law of February 14, 1907, have been violated, notice of that fact, together with a copy of the findings, shall be furnished to the party or parties from whom the sample was obtained, or who executed the guaranty as provided in the food and drugs law of February 14, 1907.

(b) If it appears from examination or analysis that the provisions of the Kansas food and drugs law have been violated, the secretary of the State Board of Health shall give notice to the county attorney of the county where the samples were taken, as prescribed.

REGULATION 4.

Publication.

Section 5.

(a) When a judgment of the court shall have been rendered there may be a publication of the findings of the examiner or analyst, together with the findings of the court.

(b) This publication may be made in the form of circulars, notices, or bulletins, as the secretary of the State Board of Health may direct, not less than thirty days after judgment.

(c) If appeal be taken from the judgment of the court before such publication, notice of the appeal shall accompany the publication.

REGULATION 5.

Standards for drugs.

Section 7.

A drug bearing the name recognized in the United States Pharmacopœia or National Formulary shall be required to conform in strength, quality and purity to the standards prescribed or indicated for a drug of the same name recognized in the United States Pharmacopœia or National Formulary official at the time of sale or when dispensed; provided, that in case of homeopathic or eclectic drugs the same shall be required to conform to their accepted standards.

REGULATION 6.

Formulas; proprietary foods.

Section 8, second in last paragraph.

(a) Manufacturers of proprietary foods are only required to state upon the label the names and percentages of the materials used, in so far as the secretary of the State Board of Health may find this to be necessary to secure freedom from adulteration and misbranding.

(b) The factories in which proprietary foods are made shall be open at all reasonable times to the inspection provided for in regulation 14.

REGULATION 7.

Form of guaranty.

Section 9.

(a) No dealer in food or drug products will be liable to prosecution if he can establish that the goods were sold, offered or kept for sale under a written guaranty by the wholesaler, manufacturer, jobber, dealer or other party residing in the United States from whom purchased; provided, that this exemption shall not apply when such dealer knew or ought to have known that said drugs or foods so sold, offered or kept for sale were adulterated or misbranded, within the meaning of the act, and the publication in the official publication of the State Board of Health, the BULLETIN OF THE KANSAS STATE BOARD OF HEALTH, of such drugs, liquors or foods as are adulterated or misbranded, within the meaning of the act, shall be deemed sufficient notice to dealers in the state of Kansas that such products are adulterated or misbranded.

(b) A general guaranty may be filed with the secretary of the State Board of Health by the manufacturer or dealer and be given a serial number, which number shall appear on each and every package of goods sold under such guaranty, with the words "Guaranteed under the Kansas Food and Drugs Law of February 14, 1907."

(c) The following form of guaranty is suggested:

I (*we*), the undersigned, do hereby guarantee that the articles of food (*or drugs*) manufactured, packed, distributed or sold by me (*us*) [specifying the same as fully as possible], are not adulterated or misbranded, within the meaning of the Kansas food and drugs law of February 14, 1907.

(Name and place of business of wholesaler, dealer, manufacturer, jobber, or other party.)

(Sign in ink)

(d) If the guaranty be not filed with the secretary of the State Board of Health as above, it should identify and be attached to the bill of sale, invoice, bill of lading or other schedule giving the names and quantities of the articles sold.

FILING GUARANTY.

In order that both the department and the manufacturer may be protected against fraud, it is requested that all guaranties of a general character filed with the secretary of the State Board of Health in harmony with regulation 7, rules and regulations for the enforcement of the food and drugs law, be acknowledged before a notary or other official authorized to affix a seal. Attention is called to the fact that when a general guaranty has been thus filed every package of articles of food and drugs put up under the guaranty should bear the legend "Guaranteed under the Food and Drugs Law of February 14, 1907," and also the serial number assigned thereto, if the dealer is to receive the protection contemplated by the guaranty. No other word should go upon this legend or accompany it in any way. *Particular attention is called to the fact that nothing should be placed upon the label, or in any printed matter accompanying it, indicating that the guaranty is made by the Kansas State Board of Health.* The appearance of the serial number with the phrase above mentioned upon a label does not exempt it from inspection nor its guarantor from prosecution in case the article in question be found in any way to violate the food and drugs law of February 14, 1907.

ADULTERATION.

REGULATION 8.

Confectionery.

Section 7.

(a) Mineral substances of all kinds (except as provided in regulation 13) are specifically forbidden in confectionery, whether they be poisonous or not.

(b) Only harmless colors or flavors shall be added to confectionery.

(c) The term "narcotic drugs" includes all the drugs mentioned in section 8, Kansas food and drugs law of February 14, 1907, relating to foods, their derivatives and preparations, and all other drugs of a narcotic nature.

REGULATION 9.

Substances mixed and packed with foods.

Section 7, under "Food."

No substance may be mixed or packed with a food product, or a product used in the preparation of food, which will reduce or lower its quality or strength. But under this provision may be employed substances properly used in the preparation of food products for clarification or refining, and eliminated in the further process of manufacture.

REGULATION 10.

Coloring, powdering, coating, and staining.

Section 7, under "Food."

(a) Only harmless colors may be used in food products; provided, that when used their presence shall be stated on the principal label, except in the case of butter, cheese, and confectionery. The use of artificial color in meat products is prohibited.

(b) The reduction of a substance to a powder to conceal inferiority in character is prohibited.

(c) The term "powdered" means the application of any powdered substance to the exterior portion of articles of food, or the reduction of a substance to a powder.

(d) The term "coated" means the application of any substance to the exterior portion of a food product.

(e) The term "stained" includes any change produced by the addition of any substance to the exterior portion of foods which in any way alters their natural tint.

REGULATION 11.

Natural poisonous or deleterious ingredients.

Section 7, 8th under "Food."

Any food product which contains naturally a poisonous or deleterious ingredient does not come within the provisions of the Kansas food and drugs law of February 14, 1907, except when the presence of such ingredient is due to filth, putrescence, or decomposition.

REGULATION 12.

External application of preservatives.

Section 7, 8th under "Food."

(a) Poisonous or deleterious preservatives shall only be applied externally, and they and the food products shall be of a character which shall not permit the permeation of any of the preservative to the interior, or any portion of the interior, of the product.

(b) When these products are ready for consumption, if any portion of the added preservative shall have penetrated the food product, then the

proviso of section 7, *fifth* under "Food," shall not obtain, and such food products shall then be subject to the regulations for food products in general.

(c) Paragraphs (a) and (b) are intended to cover or include all preservatives which are of such a character as to render the food products inedible until the preservative is removed.

REGULATION 13.

Wholesomeness of colors and preservatives.

Section 7, *fifth* under "Food."

Respecting the wholesomeness of colors, preservatives, and other substances which are added to foods, the Kansas State Board of Health may permit or prohibit such substances as the United States Department of Agriculture may designate as being wholesome or detrimental, as the case may be, and the names of those substances which are permitted or prohibited in food products shall be published in the BULLETIN OF THE KANSAS STATE BOARD OF HEALTH, but in case when a preservative is used in a food product the name and quantity of the preservative shall be plainly stated on the principal label.

REGULATION 14.

Character of the raw material.

Section 7, *first* under "Drugs," *sixth* under "Food."

The secretary of the State Board of Health, when he deems it necessary, shall examine, or cause to be examined, the raw materials used in the manufacture of food and drug products, and determine whether any filthy, decomposed or putrid substance is used in their preparation.

MISBRANDING.

REGULATION 15.

Label.

Section 8.

(a) The term "label" applies to any printed, pictorial or other matter upon or attached to any package of food or drug product, or any container thereof.

(b) The principal label shall consist, first, of all words which the Kansas food and drugs law of February 14, 1907, specifically requires, to wit: The name of the substance or product; the name of place of manufacture, in the case of food compounds or mixtures; words which show that the articles are compounds, mixtures, or blends; the words "compound," "mixture," or "blend," or words designating the substances or their derivatives and proportions required to be named in the case of drugs and foods. All these required words shall appear upon the principal label with no intervening description or explanatory reading matter. Second, if the name of the manufacturer and place of manufacture are given, they shall also appear upon the principal label. Third, elsewhere upon the principal label other matter may appear, in the discretion of the manufacturer.

(c) The principal label on foods or drugs for domestic commerce shall be printed in English (except as provided in regulation 17), with or without the foreign label in the language of the country where the food or drug product is produced or manufactured. The size of the letters shall not be smaller than eight-point* [brevier] capitals; provided, that in case the size of the package will not permit the use of eight-point capitals the size of the letters may be reduced proportionately.

* A point is $\frac{1}{72}$ of an inch.

Type IN THIS LINE is eight-point.

(d) The form, character and appearance of the labels, except as provided above, are left to the judgment of the manufacturer.

(e) Descriptive matter upon the label shall be free from any statement, design or device regarding the article or the ingredients or substances contained therein, or quality thereof, or place of origin, which is false or misleading in any particular.

(f) An article containing more than one food product or active medicinal agent is misbranded if named after a single constituent. In the case of drugs, the nomenclature employed by the United States Pharmacopœia and the National Formulary shall obtain, except as provided in regulation 5.

(g) The term "design" or "device" applies to pictorial matter of every description, and to abbreviations, characters or signs for weights, measures, or names of substances.

(h) The use of any false or misleading statement, design or device shall not be justified by any statement given as the opinion of an expert or other person, appearing on any part of the label, nor by any descriptive matter explaining the use of the false or misleading statement, design, or device.

(i) The regulation regarding the principal label will not be enforced until October 1, 1907, in the case of labels printed and now on hand, whenever any statement therein contained which is contrary to the Kansas food and drugs law of February 14, 1907, as to character of contents, shall be corrected by a supplemental label, stamp, or pastar. All other labels now printed and on hand may be used without change until October 1, 1907.

REGULATION 16.

Name and address of manufacturer.

Section 8.

(a) The name of the manufacturer or producer, or the place where manufactured, except in case of mixtures and compounds having a distinctive name, need not be given upon the label, but if given must be the true name and the true place. The words "packed for ———," "distributed by ———," or some equivalent phrase, shall be added to the label, in case the name which appears upon the label is not that of the actual manufacturer or producer, or the name of the place not the actual place of manufacture or production.

(b) When a person, firm or corporation actually manufactures or produces an article of food or drug in two or more places, the actual place of manufacture or production of each particular package need not be stated on the label, except when, in the opinion of the secretary of the State Board of Health, the mention of any such place, to the exclusion of the others, misleads the public.

REGULATION 17.

Character of name.

Section 8.

(a) A simple or unmixed food or a drug product not bearing a distinctive name shall be designated by its common name in the English language; or, if a drug, by any name recognized in the United States Pharmacopœia or National Formulary. These regulations shall not be construed as requiring a statement of the proportion of alcohol or of the other ingredients of the United States Pharmacopœia or National Formulary preparations, except when sold in unbroken packages.

(b) The use of a geographical name shall not be permitted in connection with a food or drug product not manufactured or produced in that place, when such name indicates that the article was manufactured or produced in that place.

(c) The use of a geographical name in connection with a food or drug product will not be deemed a misbranding when by reason of long usage

it has come to represent a generic term and is used to indicate a style, type, or brand; but in all such cases the state or territory where any such article is manufactured or produced shall be stated upon the principal label.

(d) A foreign name which is recognized as distinctive of a product of a foreign country shall not be used upon an article of domestic origin except as an indication of the type or style of quality or manufacture, and then only when so qualified that it cannot be offered for sale under the name of a foreign article.

REGULATION 18.

Distinctive name.

Section 8.

(a) A "distinctive name" is a trade, arbitrary or fancy name which clearly distinguishes a food product, mixture or compound from any other food product, mixture, or compound.

(b) A distinctive name shall not be one representing any single constituent of a mixture or compound.

(c) A distinctive name shall not misrepresent any property or quality of a mixture or compound.

(d) A distinctive name shall give no false indication of origin, character, or place of manufacture, nor lead the purchaser to suppose that it is any other food or drug product.

REGULATION 19.

Compounds, imitations or blends without distinctive name.

Section 8.

(a) The term "blend" applies to a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only.

(b) If any age be stated, it shall not be that of a single one of its constituents, but shall be the average of all constituents in their respective proportions.

(c) Coloring and flavoring cannot be used for the purpose of increasing the weight or bulk of a blend.

(d) In order that colors or flavors may not materially increase the volume or weight of a blend, they are not to be used in quantities exceeding 1 pound to 800 pounds of the blend.

(e) A color or flavor cannot be employed to imitate any natural product or any other product of a recognized name and quality.

(f) The term "imitation" applies to any mixture or compound which is a counterfeit or fraudulent simulation of any article of food or drug.

REGULATION 20.

Articles without a label.

Section 8, *first* under "Drugs," *second* under "Food."

It is prohibited to sell or offer or keep for sale a food or drug product bearing no label upon the package or no descriptive matter whatever connected with it, either by design, device, or otherwise, if said product be an imitation of or offered for sale under the name of another article.

REGULATION 21.

Proper branding not a complete guaranty.

Packages, although correctly branded as to character of contents, place of manufacture, name of manufacturer, or otherwise, may be adulterated, and if so are not entitled to be sold, offered or kept for sale.

REGULATION 22.

Incompleteness of branding.

A compound shall be deemed misbranded if the label be incomplete as to the statement of the ingredients required to be named. A simple product does not require any further statement than the name or distinctive name thereof, except as provided in regulations 17 and 26.

REGULATION 23.

Substitution.

Sections 3, 7, and 8.

(a) When a substance of a recognized quality commonly used in the preparation of a food or drug product is replaced by another substance not injurious or deleterious to health, the name of the substituted substance shall appear upon the label.

(b) When any substance other than that necessary to its manufacture or refining, which does not reduce, lower or injuriously affect its quality or strength, is added to a food product, the label shall bear a statement to that effect.

REGULATION 24.

Waste materials.

Section 8.

When an article is made up of refuse materials, fragments, or trimmings, the use of the names of the substances from which they are derived, unless accompanied by a statement to that effect, shall be deemed a misbranding. Packages of such materials may be labeled "pieces," "stems," "trimmings," or with some similar appellation.

REGULATION 25.

Mixtures or compounds with distinctive names.

Section 8, Proviso under "Food," first.

(a) The terms "mixtures" and "compounds" are interchangeable, and indicate the results of putting together two or more food products.

(b) These mixtures or compounds shall not be imitations of other articles, simple, mixed, or compound, or offered for sale under the name of other articles. They shall bear a distinctive name, and the name of the place where the mixture or compound has been manufactured or produced.

(c) If the name of the place be one which is found in different states, territories, or countries, the name of the state, territory, or country, as well as the name of the place, must be stated.

REGULATION 26.

Substances named in drugs and foods.

Section 8, second under "Drugs," second under "Food."

(a) The term "alcohol" is defined to mean common or ethyl alcohol. No other kind of alcohol is permissible in the manufacture of drugs, except as specified in the United States Pharmacopeia or National Formulary.

(b) The names of all drugs noted in regulation 26, paragraph (c), and the quantities and proportions thereof, shall be printed in letters corresponding in size with those prescribed in regulation 15, paragraph (c).

(c) Except as provided in regulation 17, a drug or food product is misbranded in case it fails to bear a statement on the label of the quantity or proportion of any opium, morphine, heroin, cocaine, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, acetanilid, or phenacetin, or any derivative or preparation of any such substances, contained therein, and in addition, in the case of drugs, alcohol and its derivatives, and in the case of foods, arsenic and its derivatives.

(d) A statement of the maximum quantity or proportion of any such substances present will meet the requirements, provided the maximum stated does not vary materially from the average quantity or proportion.

(e) In case the actual quantity or proportion is stated, it shall be the average quantity or proportion, with the variations noted in regulation 27.

(f) The following are among the principal derivatives and preparations made from the articles which are required to be named upon the label:

MORPHINE, alkaloid. *Derivatives*: Apomorphine, dionine, peronine, morphine acetate, hydrochlorid, sulfate, and other salts of morphine. *Preparations* containing morphine or derivatives of morphine: Bougies, catarrh snuff, chlorodyne, compound powder of morphine, crayons, elixirs, granules, pills, solutions, sirups, suppositories, tablets, triturates, and troches.

OPIMUM, gum. *Preparations* of opium: Extracts, denarcotized opium, granulated opium, powdered opium, bougies, brown mixture, carminative mixtures, crayons, Dover's powders, elixirs, liniments, ointments, paregoric, pills, plasters, sirups, suppositories, tablets, tinctures, troches, vinegars, and wines. *Derivatives*: Codeine, alkaloid, hydrochlorid, phosphate, sulfate, and other salts of codeine. *Preparations* containing codeine or its salts: Elixirs, pills, sirups, and tablets.

COCAINE, alkaloid. *Derivatives*: Cocaine hydrochlorid, oleate and other salts. *Preparations* containing cocaine or salts of cocaine: Coca leaves, catarrh powders, elixirs, extracts, infusion of coca, ointments, paste pencils, pills, solutions, sirups, tablets, tinctures, troches, and wines.

HEROIN. *Preparations* containing heroin: Sirups, elixirs, pills, and tablets.

ALPHA AND BETA EUCAINE. *Preparations*: Mixtures, ointments, powders, and solutions.

CHLOROFORM. *Preparations* containing chloroform: Chloranodyne, elixirs, emulsions, liniments, mixtures, spirits, and sirups.

CANNABIS INDICA. *Preparations* of cannabis indica: Corn remedies, extracts, mixtures, pills, powders, tablets, and tinctures.

CHLORAL HYDRATE (chloral, U. S. Phar., 1890). *Derivatives*: Chloral acetophenoxim, chloral alcoholate, chloralamide, chloralimide, chloral orthoform, chloralose, dormiol, hypnal, and uraline. *Preparations* containing chloral hydrate or its derivatives: Chloral camphorate, elixirs, liniments, mixtures, ointments, suppositories, sirups, and tablets.

ACETANILID (antifebrine, phenylacetamide). *Derivatives*: Acetphenetidine, citrophen, diacetanilid, lactophenin, methoxy-acetanilid, methyl-acetanilid, para-iodoacetanilid, and phenacetin. *Preparations* containing acetanilid or derivatives: Analgesics, antineuralgics, antirheumatics, cachets, capsules, cold remedies, elixirs, granular effervescing salts, headache powders, mixtures, pain remedies, pills, and tablets.

And, in addition, in case of drugs, **ALCOHOL**, ethyl (Cologne spirits, grain alcohol, rectified spirits, spirits, and spirits of wine). *Derivatives*: Aldehyde, ether, ethyl acetate, ethyl nitrite, and paraldehyde. *Preparations* containing alcohol: Bitters, brandies, cordials, elixirs, essences, fluid extracts, spirits, sirups, tinctures, tonics, whiskies, and wines.

And in case of foods, **ARSENIC** and its compounds.

REGULATION 27.

Statement of weight, measure, or quantity.

Section 8, third under "Food."

(a) If any statement of the weight, measure or quantity of the food contained in a package is printed, it shall be a plain and correct statement of the average net weight, measure, or quantity, and shall be placed either on or immediately above or below the principal label, and of the size of letters specified in regulation 15.

(b) A reasonable variation from the stated weight, measure or quantity for individual packages is permissible, provided this variation is as

often above as below the weight, measure or quantity stated. This variation shall be determined by the inspector or analyst from the changes in the humidity of the atmosphere, from the exposure of the package to evaporation or to absorption of water, and from the reasonable variations which attend the filling and weighing or measuring of a package.

REGULATION 28.

Method of stating quantity or proportion.

Section 8.

In the case of alcohol, the expression "quantity" or "proportion" shall mean the average percentage by volume in the finished product. In the case of the other ingredients required to be named upon the label, the expression "quantity" or "proportion" shall mean grains or minims per ounce or fluid ounce, and also, if desired, the metric equivalents therefor, or milligrams per gram or per cubic centimeter, or grams or cubic centimeters per kilogram or per liter; provided, that these articles shall not be deemed misbranded if the maximum of quantity or proportion be stated, as required in regulation 26 (d).

EXPORTS OF FOODS AND DRUGS.

REGULATION 29.

Preparation of food products for export.

Sections 1 and 2.

(a) Food products intended for export may contain added substances not intended for intra-state commerce, when the addition of such substances does not conflict with the laws of the countries to which the food products are to be exported, and when such substances are added in accordance with the directions of the foreign purchaser or agent.

(b) The exporter is not required to furnish evidence that goods have been prepared or packed in compliance with the laws of the foreign country to which said goods are intended to be shipped, but such shipment is made at his own risk.

(c) Food products for export under this regulation shall be kept separate and labeled to indicate that they are for export.

(d) If the products are not exported they shall not be allowed to enter intra-state commerce.

REGULATION 30.

Standards of purity, quality, and strength.

Sections 8 and 14.

When any article of food, liquor, drug or drink falls below the standards of quality, purity or strength which have been adopted or which shall be adopted by the United States Department of Agriculture or the Kansas State Board of Health, it shall be regarded as misbranded or adulterated, within the meaning of the Kansas food and drugs law of February 14, 1907.

REGULATION 31.

Refrigerated undrawn poultry, game, and fish.

Section 7, sixth under "Food."

The serving for food in any restaurant, hotel or dining car in Kansas of any poultry, game or fish that has been refrigerated or kept in cold storage with the crop or entrails undrawn is prohibited.

REGULATION 32.

Sanitation as affecting food or drugs.

Every place where drugs, foods or food products are manufactured, prepared, stored, sold or offered for sale shall be required to be kept in a sanitary condition, and when the chief food inspector or his assistants, or

any state or local health officer, shall find any such place in an unwholesome or unsanitary condition, he shall give the owner, agent or manager of such place a written notice to such effect, and any neglect or refusal to comply with such notice shall subject such person to the penalties provided in section 3.

REGULATION 33.

Sidewalk displays.

The sidewalk display of perishable products is prohibited unless such products are enclosed in a show case or similar device, which will protect the same from flies, dust, or other contamination. Other food products that necessarily have to be peeled, pared or cooked before they are fit for consumption may be displayed on the sidewalk, provided that in such display the bottom of the container be at least eighteen inches above the surface of the sidewalk.

REGULATION 34.

Label follows display products.

When food products are taken from the original packages and exposed for sale, these food products shall be accompanied by a copy of the label of the original package, conspicuously displayed.

REGULATION 35.

Label must not be destroyed.

Labels on barrels, boxes, tubs, pails, casks or other packages must be so placed as not to endanger their mutilation or destruction in opening such packages. If packages are used from which goods are being sold or offered for sale or display, and from which the original label has been removed, destroyed, or rendered illegible, the goods contained therein will be considered misbranded within the meaning of the law.

REGULATION 36.

Alterations and amendments of regulations.

These regulations may be altered or amended at any time, without previous notice, by the Kansas State Board of Health.

The above rules and regulations are hereby adopted.

KANSAS STATE BOARD OF HEALTH.

Approved by the board March 8, 1907.

Attest: S. J. CRUMBINE, *Secretary*.

Approved by the governor March 30, 1907.

Published in official state paper April 2, 1907.

MINUTES FIRST QUARTERLY MEETING.

The first quarterly meeting was held in the office of the secretary in the statehouse, at Topeka, July 2. Upon roll call all members of the Board were found present excepting Doctors Locke and Alexander. All the members of the advisory board were present excepting Professor Sayre and Mr. Deacon.

The minutes of the last quarterly meeting, being that of March 7 and 8, were read, and upon motion of Mr. Welch were amended as follows: That the rules and regulations of the Kansas food and drugs law be hereto attached and made part of this report under "exhibit A."

The special committee on antitoxin, composed of Doctor Lerrigo, Professor Sayre, and the secretary, after making a brief report, was continued until the next regular meeting of the Board.

The special committee on state institutions then made a report, which report, upon motion, was ordered printed and placed on file. The following is the report of the committee:

Members Scott, Welch and Lerrigo visited the State Industrial School for Boys July 1, 1907. We were cordially received by Superintendent Charles, who personally conducted us through the building and grounds.

Our inspection was with special reference to the subject of ventilation, building, condition of kitchen and hospital, plumbing, sewage, and food and water supply.

Superintendent Charles called attention at once to a tunnel passing between the main buildings for the purpose of conducting plumbing for drainage and water supply, which is a very serious defect, possibly the most serious in the institution. The tunnel is winding and generally it is impossible to have a current of air through it. In view of the fact that the grounds are situated near to the creek and occasionally flooded, this tunnel is kept damp, and although the superintendent has provided vents wherever possible it is never thoroughly clean and dry.

In inspecting the main buildings, we noticed in the dormitory, situated on the third floor, providing beds for ninety-two boys, that the ventilation was quite inadequate. This is a defect recognized by the management, but which the insufficient space does not allow them at present to rectify, and probably could only be corrected by abandoning this floor for dormitory purposes and erecting a new building to take its place.

We found that the bedding is well cared for and aired each week; that the plumbing is in a fair condition throughout, and the building is kept scrupulously clean.

The kitchen is managed by a score of boys under the direction of an employee and is kept thoroughly clean, and the food supply is of good quality.

We found the hospital to have only one inmate, the health of the institution being generally very good. This hospital, an old cottage, is very much in need of repair, especially as to the walls and ceiling, which should be replastered. In the present cracked condition it would be quite impossible to properly disinfect the building following any case of contagious disease. We found that they had but one case of tuberculosis cared for in the past year, but the patient had been placed in a tent outside the building in order to get the benefit of the fresh-air treatment, and the building had been fumigated after the close of the case.

We found the disposition of the sewage properly cared for, with one exception. The industrial building drains into Soldier creek a few feet above the location of the well from which the institution gets its water supply. This well is about 100 feet from the creek bank, but the water is undoubtedly the same body and could readily be infected by anything that could contaminate the waters of the creek.

While the records of the institution as to epidemics have always been excellent, and the management feels confident that the water supply is not affected by this drainage, it is the opinion of your committee that there is danger in existing conditions, and that to make matters safe the drainage from the industrial building should certainly be carried well below the site of the location of the well before being allowed to enter into the creek.

With this exception we are well satisfied with the condition of the institution, and believe that the superintendent is keeping it in as good shape as possible with the means available.

The secretary's report was then read and ordered placed on file.

Communications in the shape of protests against regulation 10, from the soda-water manufacturing houses, and their attorney, Mr. Thomas E. Lannen, of Chicago, were then read.

Mr. Kendall, newly appointed state dairy commissioner, who

was present, was then introduced to the members of the Board, and called upon for an address, which was responded to in a most happy manner, in which he assured the Board of his hearty coöperation in the matter of securing to the people of the state more wholesome dairy products.

Upon motion, the Board adjourned until 1:30 P. M.

The Board reconvened at 1:30, when the resignation of Mr. A. H. Roby, drug inspector, was read, and the appointment of Mr. J. F. Tilford, of Olathe, as drug inspector, was approved, whereupon a motion was carried instructing the secretary to cast the vote of the Board for Mr. Tilford as drug inspector.

A motion was carried authorizing the secretary, in conjunction with the sanitary adviser and sanitary engineer of the advisory Board, to approve or disapprove the applications for the erection or extension of waterworks, new sources of water supply and sewer systems, provided such applications have been filed at least ten days before any quarterly meeting of the Board.

Upon motion, the Board unanimously voted to set aside a sum not to exceed \$500 for the fiscal year ending June 30, 1908, to be paid out of the sanitary fund of the Board, for the purpose of paying Mr. H. N. Parker's traveling expenses in the matter of sanitary field work for the State Board of Health.

That portion of the secretary's report setting forth decisions made under the food and drugs law was then fully discussed, and it was unanimously agreed that the Board's committee on food and drugs were authorized to make such decisions on such matters as were not satisfactorily and fully covered by the law or the rules and regulations, and that such decisions did not require the further approval of the Board.

The secretary called the attention of the Board to the importance of the National Tuberculosis Congress to be held in Washington in September and October, 1908, and urged that a representative of this Board be selected to attend this congress. The matter was postponed until a future meeting.

A motion was then unanimously carried appointing the secretary as the Board's representative to attend the meeting of the National Food and Dairy Commissioners, to be held in Norfolk, Va., July 16 to 19.

The question of the necessity of stating the presence of artificial color in soda water was then taken up and fully and thoroughly discussed, after which the following motion prevailed: That the secretary be instructed to reply to the letters of protest from the manufacturers of soda water supplies that they saw no reason for modifying regulation 10.

A communication from Professor Sayre was then read, whereupon the following motion was unanimously carried: That the expenses of Professor Sayre from New York to Washington be allowed, and that he be given letters of credentials as the drug

analyst for this Board to present to the food and drug officials at the national capital.

Upon motion of Doctor Carver, the secretary was instructed to have samples of water taken from the city water supplies of such cities which recent examination had shown to be contaminated, and that where the second examination confirmed the first findings such city should be informed of the conditions found.

Doctor Greenfield then presented her regular report.

The matter of the bacteriological examination of the milk supply of the city of Topeka was then taken up and discussed, and a motion prevailed authorizing the secretary to take such steps as were necessary.

A motion prevailed that the action of the water and sewage committee, which was reported to the Board, be approved by the Board.

There having been no annual meeting held in June, on account of no funds in the treasury to pay for such meeting, the annual election was then held, and resulted in the selection of the following-named persons for the positions named: J. B. Carlile, president; Dr. A. B. Scott, vice president; Prof. W. C. Hoad, Lawrence, sanitary engineer; Prof. F. O. Marvin, sanitary advisor; Prof. L. E. Sayre, director drug analysis; Prof. J. T. Willard, food analyst; Prof. E. H. S. Bailey, food analyst; Dr. S. E. Greenfield, bacteriologist.

The following bills were audited and allowed:

| | |
|-----------------------|---------|
| J. B. Carver | \$28 68 |
| C. D. Welch | 35 72 |
| H. M. Bentley | 27 25 |
| J. B. Carlile..... | 29 92 |
| Clay E. Coburn..... | 7 68 |
| C. H. Lerrigo | 10 00 |
| A. B. Scott | 38 35 |
| L. A. Golden | 29 60 |
| E. H. S. Bailey | 2 68 |

Upon motion, Board adjourned.

SECRETARY'S REPORT.

To the Members of the State Board of Health:

GENTLEMEN:—Since the last meeting of the Board the work of this office has been voluminous and exacting. With the new food and drugs law and water and sewage law in operation in addition to the former multitude of duties, we find our office force entirely inadequate to accomplish the work before us. Such things as have been accomplished and those things that we desire to accomplish in the future are herewith submitted for your consideration.

On March 25, the four food and drug inspectors selected by the Board arrived in Topeka for the purpose of a school of instruction preparatory to starting upon the road in the performance of their duties. This school consisted of a course of instruction by the three analysts of the Board, who were kind enough to come to Topeka for that purpose, and addressed the inspectors on the following subjects: The relation of the inspectors to the trade; the relation of the inspectors to the consumer; the relation of the inspectors to the analysts; and the relation of the inspectors to the State

Board of Health. These, with a great many other subjects, were thoroughly discussed. The secretary spent several days in drilling the inspectors in the provisions of the laws, rules and regulations, and catechizing them upon the food and drug adulterations. The remaining days of the week were spent in actual inspection of stores, bakeries, bottling works, restaurants, manufacturing plants and other places where food and drug products are stored or prepared or kept for sale. I believe this school of instruction was fruitful in preparing our inspectors for the exacting duties which necessarily devolve upon them in the performance of their work under the law.

On April 1 the four inspectors started out on the road, fully equipped with the necessary blanks and copies of the law, rules and regulations. From the results thus far I have reason to believe that the work accomplished has been beneficial, not only to manufacturers and dealers, but to the great army of consumers as well. It was thought best that the first visit of the inspector to the dealers and manufacturers should be one of instruction in the fundamentals of the law, rules and regulations, and also to point out to them in so far as was possible such articles as were on their face apparently adulterated or misbranded, in order that they might have the opportunity to adjust their business to the new order of things. No attempt has been made to find cases for prosecution, as that would, while being a very easy matter to do, simply bring the law and the department into disrepute, and result in hindering and preventing the very thing which we desire to accomplish. The trade have recognized and acknowledged this attitude of fairness and leniency, and have universally expressed their approval of the policy, at the same time declaring their intention to as rapidly as possible adjust their business to the new requirements, pledging their hearty support in the literal enforcement of the law. When we realize that millions of dollars are invested in stocks of goods which come under this law, we begin to appreciate the importance of proceeding with tact and judgment in carrying out the provisions of the law. I am pleased to say, however, that thus far we have met with unqualified success and a spirit of coöperation that has been exceedingly encouraging.

No particular events of importance have occurred, with the exception, perhaps, of three cars of baking powder discovered at Wichita by our inspectors, while it was being unloaded, most of which was misbranded. The manufacturer of this powder had previously consulted with the secretary, and had assured us of his compliance with the regulations as to branding, and the apparent violation of his assurance in this case was particularly annoying. The matter was satisfactorily adjusted, however, and the powder replaced by legally branded powder.

Similarly, a large quantity of vinegar was detected as being substandard in strength, and future orders to the amount of fifteen carloads of such vinegar were canceled or required to be of legal strength.

Inasmuch as the department has but four field inspectors, and the area of Kansas being so great as to preclude the possibility of its being covered more than two or three times a year, it was thought best to hold schools of instruction in the larger cities of the state, whereby manufacturers, jobbers and dealers might be met face to face, and the information they desire, together with the proper illumination of the law, rules and regulations, to be made early, in order that abundance of time be given them to readjust their business and stocks before the 1st of October, at which time all labels are supposed to be in accordance with the law. Accordingly, meetings were held at the following places and times: Wichita, April 11; Emporia, April 12; Topeka, April 18; Kansas City, April 29; Atchison, May 2; Leavenworth, May 3; Manhattan, May 6; Salina, May 7; Hutchinson, May 8; Iola, May 21, afternoon; Fort Scott May 21, evening; Coffeyville, May 23; Independence, May 24; Pittsburg, May 25, afternoon; Parsons, May 25, evening.

These meetings were addressed by the analysts for the Board and the secretary, and I have to say that they were in most instances well attended; and a great deal of interest was shown by the dealers, and assurances given of hearty coöperation in the enforcement of the law. This also gave us an opportunity of inspecting the larger wholesale houses and of meeting the distributors of goods face to face, helping them to solve the problems and

to arrange for coöperative work in the enforcement of the law itself. I believe this has been the most important work that has been accomplished in lining up the trade with the Board in the matter of pure food and drugs for this state. The interest manifested by the dealers might best be illustrated by saying that in many of the meetings dealers came for long distances, at their own expense of course, several coming as far as 125 miles to hear the talks and to get information which applied specifically to their business. Incidentally, it might be said that these meetings offered the analysts and the secretary a great opportunity for gathering much information which will be exceedingly valuable in the work of the respective departments. In this connection I desire to express my highest appreciation to Professors Bailey, Sayre and Willard for their valued services and time in addressing these meetings, and in making possible the success of the Kansas food and drug law.

Naturally the mails have been burdened with letters from manufacturers and dealers, asking for information or submitting specific questions of labels upon which they desire a decision. It seems as if these questions are never-ending, and it is presumed they will continue to come for many months in the future. The law as it reads seems simple, but when applied to a specific article its application is oftentimes exceedingly difficult, therefore decisions are as a rule required on each specific article. This illustrates the enormity of the task before us, and gives promise of many vexatious questions which will be exceedingly difficult of solution, and in which there will in many instances be a plea by manufacturers or dealers from the decisions of the Board. In this connection I desire to present a number of letters from manufacturing houses that are distributors of soda-water supplies. These letters are filed in remonstrance to the decisions of the Board as found in regulation 10, paragraph *a*, as applied to soda pop.

WATERWORKS AND SEWERS.

The new water and sewage law has entailed great additional work for this department. As soon as possible after its approval by the governor the matter of formulating blanks necessary for filing information under this law was undertaken, and with the assistance of Mr. Parker and Professors Marvin and Bailey the blanks were finally prepared and ordered printed. This necessarily took considerable time, and before the blanks were mailed to the different municipalities and corporations thirty days out of the sixty allowed by law had elapsed. Grateful acknowledgment is hereby made to the aforesaid gentlemen for their aid and assistance in this matter and in checking over the returns, which would not have been done up to the present time without their generous help, as we find our time so thoroughly taken up with the other pressing duties of the office as to make it impossible to have accomplished this work without their assistance.

Permission for the construction of sewerage systems and the discharge of sewers into the natural waters of the state have been granted by the committee provided under the law, composed of the governor, attorney-general and the secretary, to the following-named cities: On May 11, to the city of Caney, to discharge untreated sewage into the Little Caney river; on May 11, to the A. T. & S. F. Railway company, to discharge partially treated sewage into Shunganunga creek; on June 11, to the city of Larned, to discharge untreated sewage into Pawnee creek or the Arkansas river.

The plans for these received the approval of the Board's sanitary engineer, and we trust will receive the approval of the Board. Following this permission to the city of Larned, exceptions were taken by some of the citizens, and request made that the secretary and the sanitary engineer go to the city of Larned for the purpose of personal inspection, and accordingly, on June 7, such visitation was made. A review of the situation and condition found convinced us that the permission that had been granted should not be withheld. On June 8, Professor Marvin and the secretary made a visit to Kingman, and on the 10th to Ellsworth, to investigate the additional source of water supply required by these cities. These additional sources as set forth in their plans and specifications, which are herewith submitted, have the approval of the sanitary engineer and the secretary, and we trust will meet with the Board's approval.

The filing of the information required under the water and sewage law will be of inestimable value to the Board in a sanitary way, as revealing in a very comprehensive manner the sanitary conditions of the various cities throughout the state. Thus we feel that the interpretation of certain epidemics, particularly those of water-borne diseases, may be more clearly understood and more appropriate remedies proposed for their prevention with the information that is now being placed on file than might be had in any other way.

Many curious and astounding facts are brought to the knowledge of the Board in the filing of this information. Many sources of pollution can undoubtedly be abated or prevented in the future. For instance, we find in one river of the state, from which a number of cities take their sources of water supply, that a certain milling company have been making repairs on their dam in stopping leakage by hauling large quantities of horse manure and dumping therein; also that the natural watercourses have been made the dumping place of all sorts of filth and contamination. It also seems that many of the so-called filter systems and devices are entirely inadequate and inefficient in the work they are supposed to do.

Quite a number of cities are at present making ready to put in water-works or to increase their sources of supply, and as the work in this department will be increasing as the months go by, particularly for the next two years, the necessity is apparent that this department be supplied with a sanitary engineer, whose time shall be entirely devoted to this work, and who shall be paid at the expense of the state. The chancellor of the University has kindly consented to offer the services of Professor Hoad, who has had some special training in the Massachusetts School of Technology, and whose services will be of no expense to this Board except the actual traveling expenses incident thereto. I would therefore recommend that we accept the chancellor's generous offer, and that Mr. Hoad be elected as an advisory member of this Board under the title of sanitary engineer, and that Professor Marvin be reelected under the title of sanitary adviser. Professor Marvin's services have been very valuable to the Board in the years gone by, but his duties at the University will be of such a nature as to make it impossible for him to go out over the state investigating and approving the work that will naturally come before the Board during the coming years. He has generously signified his willingness to continue as sanitary adviser of the Board, and has suggested that Professor Hoad be elected as sanitary engineer.

The last legislature passed a law presumably appropriating \$1500 a year for two years to carry on a coöperative work between this Board and the United States Geological Survey in the sanitary and industrial survey of the natural waters of the state. I have to advise you that an opinion rendered by the attorney-general has declared this bill invalid, and that our plans as originally proposed cannot be carried out. On urgent solicitation to the United States Geological Survey it was agreed that the survey continue Mr. Parker in the field for another year, beginning July 1, 1907, and it was suggested that inasmuch as the work being done was for the benefit of the state of Kansas, and particularly to this department, that if possible his traveling expenses be paid. This seemed to me as a legitimate and necessary expense for the sanitary department, and which if not done by Mr. Parker would have to be done by our engineer or a member of the Board at a greatly added expense, hence it is recommended that the Board allow Mr. Parker's traveling expenses out of the sanitary fund of the Board. This it is understood will not exceed an average of forty dollars per month.

The last legislature recognized a state laboratory for the Board, in that they appropriated a sum of \$500 for additional equipment and \$500 per year for two years for maintenance. While this was not what we had asked or hoped for, nevertheless it is a good beginning for the permanent establishment of an up-to-date laboratory, where the people and the physicians of this wealthy state may have certain scientific work done at the expense of the state, and with accuracy and precision.

The food and drugs law provides that the food and drugs laboratories at the University and Agricultural College have such additional help and equip-

ment as to expeditiously and properly analyze all food and drug products sent there by this department. I am advised by our analysts that steps have been taken for increased facilities in the laboratories. I want also to say at this time that this department and the state of Kansas are to be congratulated that we have the services of such eminent and scholarly gentlemen as are provided for in this law. Their experience and the ample facilities at their disposal give this department such a combination as could not be had perhaps in any other way, except at very greatly added expense to the state.

In accordance with the resolutions offered by the Board at their September meeting, the following official letters have been sent to county and municipal health officers of the state:

"TOPEKA, April 29, 1907.

"To the County and Municipal Health Officers:

"We are inclosing you herewith our pamphlet containing the revised rules and regulations of the State Board of Health and the general health laws, including those passed at the last session of the legislature. You should familiarize yourself with these revised rules and regulations and the new laws relating to public health. I desire to particularly call your attention to the resolutions of the Board, as found on page 23, on fumigation of schoolhouses, disinfection after typhoid fever and consumption, and inspection of slaughterhouses. The law provides that health officers shall put into execution the orders of the State Board of Health, and provides a penalty for refusal or neglect to do so. We trust that these orders will be fully and literally put into execution.

"We also desire to call your attention to the new nuisance law, as found on page 27. Hitherto, local boards of health had very little authority or power in regard to the abatement of nuisances. Under this law you have ample authority for the abatement of such nuisances as are found to be inimical to the public health.

"I desire also to call your attention to rule 9, which defines a sanitary slaughterhouse, and to rule 11, which is self-explanatory.

"The control of many of the infectious diseases, particularly that of typhoid fever, will never be accomplished until the house fly is put out of business; and while we may not expect in this generation to accomplish that much-desired result, we can make a good beginning, and start the propaganda of education along this line, which will ultimately no doubt bear fruit.

"Inclosed also find a copy of the pure food and drugs law and the rules and regulations governing the same, together with other miscellaneous laws bearing on this subject.

"Attention is directed to regulation 32, in which local health officers have a duty to perform in the sanitation of places and things where food products are manufactured, stored, sold or offered for sale. The slaughterhouses and meat markets should receive frequent attention, in order that they may be required to be kept in a sanitary condition.

"Trusting for your hearty coöperation in these sanitary and preventive measures, I am sincerely yours,

S. J. CRUMBINE, M. D.,
Secretary."

"TOPEKA, June 21, 1907.

"To County and Municipal Health Officers:

"Herewith find enclosed notices to be handed or mailed to the owners of every slaughterhouse in your county. If you have not yet made a personal inspection of the slaughterhouses required by the order of the Board, I trust that you will do so immediately, using the occasion for serving a personal notice upon each owner by handing them one of these signed notices.

"I would be glad to have a definite report from you as to the conditions found in your county, with the name and address of each owner of a slaughterhouse. I am anxious to have a corrected list of all such places in the state. I trust that you will not fail me in this important matter.

"I desire to again remind you of the annual fumigation of schoolhouses within your county, and to the duty of county health officers under regulation 32 of the food and drugs law.

"The annual meeting of county health officers with the State Board of

Health will be held some time in November of this year. It was thought that we could have a larger attendance at that time. It is proposed to have the presence of some distinguished gentlemen, who will speak on food and drug adulteration, and on municipal water supply and sewage and sewage disposal. These questions, together with certain other sanitary problems and addresses on preventive medicines, will insure a pleasant and profitable session. It is suggested in the meantime that the matter be presented to the county board of health, and that they be requested to send a representative, preferably the county health officer, to this, the fourth annual conference.

Very truly yours,

S. J. CRUMBINE, M. D.
Secretary."

Appreciating the fact that the basis of all reform movements must begin with the education of the people, we have undertaken a coöperative work with the state superintendent of public instruction, and to that end have supplied pamphlets on prevention of tuberculosis, scarlet fever and diphtheria, and Professor Bailey's kitchen tests, to the instructors of the county normals, in order that the information therein contained might be quite generally disseminated among the school teachers of the state. It was thought that threatened epidemics of contagious diseases might be averted by the teacher being in possession of certain fundamental information concerning these diseases, and that added interest in the food and drugs law might obtain by the practical analytical work of the pupils in the advanced grades in working out the simple kitchen tests. Quiz classes on the law, rules and regulations have been established in certain places, and I doubt not that much good must come from this educational propaganda.

On June 22, Mr. A. H. Roby, drug inspector for the Board, resigned his position and requested an immediate acceptance. Accordingly his resignation was accepted by wire. Mr. Roby owned a store, and he gave as his reason for resigning that his business was leaving him, and it was not at all profitable to have his business ruined while he was on the road for the state. In accordance with the resolution offered by the Board at the last quarterly meeting, authorizing the secretary to appoint an inspector should a vacancy occur between sessions, I at once appointed Mr. J. F. Tilford, of Kansas City, Kan., to the position of drug inspector. Mr. Tilford is very highly recommended by Professors Sayre and Bailey, they having personal knowledge of his work while he was a student at the University, of which institution he is a graduate. His experience in retail drug business, together with a pharmacist's education which he has received, eminently qualifies him to receive the position of drug inspector for this Board, and I trust his appointment may meet with your approval.

Inasmuch as it is quite impossible for the Board to be in session at any time a municipality or private corporation desires permission to construct or extend a sewer system or waterworks system, it is suggested that the Board confer authority upon the secretary and the sanitary adviser and sanitary engineer to approve or disapprove such applications, as the case may be, after appropriate investigation; these matters of course to be laid before the Board for final approval at their next meeting.

CONTAGIOUS AND INFECTIOUS DISEASES.

The state of the public health in the matter of contagious and infectious diseases, as set forth in the annual reports of county health officers for 1906, seems to show an improved condition over that of the year previous, with the exception of diphtheria and measles.

In 1905 there were 1800 cases of diphtheria reported, with 251 deaths; the past year there were 2256 cases and 296 deaths. This marks the highest point in the number of cases of diphtheria that have ever been reported since the creation of this department. It should be noted that while the mortality of the year previous was 13.9 per cent of the cases reported, this year it has dropped to 7.5 per cent of cases reported, which is certainly an exceedingly gratifying showing, and once again attests the very great value of an early diagnosis, which has been made possible by the creation of our state laboratory, and by the early and generous use of antitoxin serum.

In 1905 there were 1359 cases of scarlet fever reported, with 76 deaths. The past year there were 1340 cases reported, with 68 deaths, showing a slight decrease both in number of cases and deaths.

In 1906 there were 4116 cases of smallpox reported, with 83 deaths, giving a death rate of 0.8 of 1 per cent. The past year there were 1554 cases, with 4 deaths, giving a death rate of 0.26 of 1 per cent.

For 1905 there were reported 397 deaths from typhoid fever, making a death rate of 28.9 per 100,000 population of counties reporting. This past year there were 368 deaths from typhoid fever, with 1731 cases reported. The number of cases reported is manifestly in error, for as it is usually reckoned that the mortality of typhoid fever is about 10 per cent of cases reported, it should be approximately 4000 cases. These deaths and cases must be a pathetic reminder of the pollution of our water supplies, calling for a vigorous and painstaking examination into the sources of contamination and for the application of appropriate measures of prevention. The new water and sewage law gives to this Board the instrument whereby much good may be accomplished by putting into operation these measures whereby municipalities will be required to have an untainted water supply.

Tuberculosis still claims the largest number of victims of those who have died from any one disease, the number of deaths reported for the past year being 882. This number is considerably less, however, than that reported for the year previous, being at that time 965, or 77 more than the past year. The inaccuracy of vital statistics as now gathered under our system is such as to make it impossible to know whether or not this decrease is real or apparent. The large number of cases actually reported, however, leaves no doubt as to the enormity of the problem confronting this present generation in their battle against this preventable disease.

In October, 1908, there will be held in the city of Washington an "International Congress of Tuberculosis," at which time the foremost sanitarians and authorities on tuberculosis of the world will be present, and to which meeting an invitation has been extended to this department to have representatives present, as well as representatives from the state and cities of the first class. It is to be hoped that we may not let this opportunity go by of having a representative of this Board at this meeting. No other such opportunity will be presented in this generation. Here we may see the greatest tuberculosis display that has ever been gotten up in the history of the world, and may hear and learn of up-to-date measures in the prevention of this scourge of the earth.

The number of cases and deaths from dysentery and cholera infantum are practically the same as the preceding year.

It is with much gratification that I have to report to you that annual reports have been received from all but two counties in the state—Chase and Smith—and we are in hopes of receiving reports from these counties before our biennial goes to press.

I desire to express my appreciation to the attorney for the Board for his assistance in the work of this department for this past year, not only in helping to jog the memories of delinquent county health officers, but in spending much valuable time in giving decisions of importance on the various laws pertaining to this department.

The following important rulings have been made by the secretary, which are herewith submitted for your approval:

"Compound products that are labeled as containing maple syrup and cane syrup, in which the parts or per cents are not expressed, must contain at least fifty per cent of maple syrup in the product. Any deviation below this amount must be expressed in parts or per cent."

"The use of commercial or wood acetic acid in the manufacture of vinegar is absolutely prohibited."

"Dried or evaporated fruits that have been artificially bleached or preserved by passing through the fumes of burning sulfur must be branded on each package sold by wholesale, 'Sulfur Bleached.'"

"Chewing-gum is a confection and is therefore subject to the same requirements as those of candies and other confectionery."

"Jersey Cream Soda, as applied to pop, which is now a proprietary soda sold within the state, is an illegal name."

"The use of any kind of preservative, either by direct contact, by mixing with or by absorbing the fumes of any gas, is absolutely prohibited in meat products."

"The use of saccharin in food or drink products is absolutely prohibited."

"Oils that are labeled 'sweet oil' must be olive oil. That which is cottonseed oil will not be permitted to be sold as sweet oil unless specifically designated as being cottonseed oil."

"The manufacture or sale of food products colored with sulfate of copper is prohibited." Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary*.

MINUTES OF NOVEMBER MEETING.

The second quarterly meeting of the State Board of Health was held in the office of the secretary on Thursday, November 14, at 1:30 P. M. All members of the Board responded to roll call, except Doctor Scott, who came in later.

The minutes of the last meeting were read, approved, and ordered placed on file.

The secretary's report was then read, and upon motion, was received and ordered placed on file.

The recommendations in the secretary's report were then taken up, the first of which was the adoption of the standards for foods. After a general discussion and several amendments of these standards, they were unanimously adopted on roll call by the following resolution, introduced by Mr. Welch:

Resolved, That the standards as recommended by the committee and amended by the Board are hereby adopted by the State Board of Health as the standards for the state of Kansas, to be known as regulation 37, and shall be in force and effect from and after their publication in the official state paper.

Upon motion the following regulation was adopted as regulation 38:

A compound spice which is named after a single spice shall be named after the predominant spice, and all other spices present shall be stated upon the label. This regulation shall be in force and effect from and after its publication in the official state paper.

It was moved and seconded that the action of the secretary and sanitary and civil engineer in approving the extension of the water supplies of the cities of Mankato, Lebanon, El Dorado and Marion be approved by the Board.

After a discussion of the sewage pollution of streams, the following resolution was introduced by Doctor Alexander, and unanimously adopted:

WHEREAS, It has been shown by experience and scientific research that the discharge of sewage into streams is a menace to the public health; that

the theory of the purification by natural means of water so contaminated is a delusion and a snare: therefore be it

Resolved, That, in the opinion of the Kansas State Board of Health, immediate and decisive steps ought to be taken to abate a custom so repulsive and dangerous, and that failure to do so is a dereliction of duty on the part of the officials concerned, amounting to a crime against the people of the state.

It was moved and seconded that "Circular No. 11, to Inspectors, Decisions on Drugs," as issued by the secretary, be approved.

The report of the chairman of the committee on state institutions was then read, approved, and ordered placed on file. The report follows:

Your committee, represented by Doctor Crumbine and Doctor Lerrigo, visited the Osawatomie State Hospital, September 26, 1907. We were very cordially received by the assistant superintendent, Doctor Van Nuys, who attended us through the institution.

Our conclusions are that the management has used excellent judgment in caring for and handling this large institution, and that its defective points are chiefly so far the lack of means to rectify them. The chief points of interest from the standpoint of this Board are:

1. The institution is overcrowded, and this is especially apparent in the buildings for incurables, where the dormitory system is followed, and the wards have from 40 to 60 beds, with no great number of windows. It is safe to say that the inmates of these wards do not get the normal 1000 cubic feet of air. This overcrowding is of course bad for tubercular patients. An attempt is made to isolate tubercular cases, but they are not able to handle this very well, as was shown when we found in the special ward four beds, where but one should be.

2. The plumbing of the institution is good and an especially good feature is a standpipe system of ventilation, the drafts of which very effectually remove odors from the stools. The sewage is discharged into the Marais des Cygnes safely below the source of water supply.

3. The water supply, which is direct from the same river, is not above suspicion. It is treated by sedimentation in an open reservoir and filtration through sand. The officials pointed to the fact that the institution has never had a case of typhoid fever as good evidence that this treatment effectually purified the water; but while congratulating them on this point, and admitting certain weight to the evidence, we feel that the water would be safer with the use in addition of a good coagulant. It is worth noting, however, that in general the institution uses for drinking purposes water from a well inside the grounds, and possibly this fact may have more to do with the absence of the typhoid than the method of treatment of the river water, and the very fact of the use of this well water would indicate that the officials themselves are a little suspicious of the efficacy of the method.

When we consider that the city of Ottawa, some thirty miles above, discharges its untreated sewage into the river, we cannot refrain from thinking that an epidemic of typhoid at that place might cause a serious disturbance at the State Hospital, unless they confine the drinking water entirely to the supply from the well inside the grounds.

We recommend (1) that Professor Road be requested to give special attention to the water supply of this Institution; (2) that the Board of Control provide for this institution a tubercular pavilion similar to that erected at the Topeka Hospital.

C. H. LERRIGO.
S. J. CRUMBINE.

Doctor Alexander then read the report of the committee that visited the State Penitentiary, at Lansing, which is as follows:

On October 24 and 25, 1907, your committee visited the State Penitentiary, at Lansing, in order to consider the sanitary conditions, including ventilation and food supply.

We found that most of the cells were of capacity of about 8x8x4. They

were whitewashed and clean and we did not detect any disagreeable odor in connection with them. We found them closed by grated gates so as to permit the free ingress and egress of the air, and in each cell were two small openings through which air was blown. A few cells were closed with nearly solid doors outside the iron grating, and there, of course, the ventilation was not so satisfactory.

Usually one man was confined in a cell, but in some cases there were two occupants on separate cots. This seemed to us to be too much crowded to allow the air to remain sufficiently pure, but we understand that this condition is only temporary.

The cell houses are ventilated by fans, so that there seems to be a constant circulation of air. The sanitary regulations and the use of the night pail in the cells seem to be satisfactory.

In the dining room the men are somewhat crowded, but as they remain only a short time in this room the conditions may be considered not very unsatisfactory.

The woman's department is supplied with a new cell house, and into this an abundant current of air is blown over steam radiators in the winter, and the toilet arrangements of the cells seem to be very satisfactory.

In the tailor shops we found that the closets were not satisfactorily flushed, and that, on account probably of defective plumbing, there was considerable water on the floor. In most of the shops, however, the sanitary arrangements were excellent.

The arrangements for bathing the prisoners in squads seem to be all that could be desired for facility and cleanliness.

In the coal mine we found that a good ventilating system keeps the air in circulation, and the men at the "face," where the work is carried on, are supplied with an abundance of fresh air.

One thing very much to be commended in this mine is the sanitary condition of the barn in which the mules are kept. Here there is no odor such as is common in stables, and the floors are clean and free from litter. All the refuse material is removed daily from the mines, and nothing of a disagreeable nature or that would readily decay is allowed to remain. We were glad to learn that arrangements are being made to light the mine with electricity. This improvement should have been made long ago in the interest of greater safety and to insure purity of air and freedom from smoke.

Another improvement which is to be installed is the equipment of the mine with telephones. This also has been too long neglected, and is a precaution that should have been taken for the safety of the workmen.

The water supply for the Penitentiary is obtained from points driven in the Missouri river bottom within about fifty feet of the river. The water is pumped to a reservoir on a bluff overlooking the river, from which reservoir it flows by gravity to the Penitentiary. A partial examination of a sample of water taken from a faucet in the prison hospital was made in the laboratory of the University by Dr. F. W. Bushong, with the following results, expressed in parts per million:

| | |
|--------------------------------------|-------|
| Nitrogen in free ammonia | 0.164 |
| Nitrogen in albuminoid ammonia | 0.806 |
| Nitrogen in nitrites | 0.002 |
| Nitrogen in nitrates | 0.250 |
| Chlorin | 14. |
| Total mineral matter | 530. |
| Loss on ignition | 40. |

These results indicate that the water is of good quality. About 200,000 gallons of water are pumped daily, though in the summer a larger amount is consumed.

We also made some examination of the food supplied to the inmates of the Penitentiary, and found it to be of good quality. The bakery is old and needs new appliances and modern machinery, both to secure a more thorough mixing of the dough in making bread, and in the interest of cleanliness. It is suggested that if the fermentation of the bread is checked a little

earlier the product may be somewhat improved and there may be less tendency to sour. In this way the bread will be more wholesome.

Taking it all together, we are pleased to be able to say that we found the general sanitary condition of the Penitentiary good, and the food and water supplied to the inmates to be satisfactory.

C. H. LERRIGO, *Chairman*,
E. H. S. BAILEY.
S. J. CRUMBINE.
B. J. ALEXANDER.

The annual report of the bacteriologist for the year ending June 30, 1907, was submitted, as follows:

| | |
|-----------------------------------------------------------------------|-----|
| Specimens examined for tuberculosis | 686 |
| Specimens showing tuberculosis | 205 |
| Specimens examined for diphtheria | 362 |
| Specimens showing diphtheria | 161 |
| Samples of water tested for the bacillus <i>Coli communis</i> , | 59 |
| Number showing bacillus <i>Coli communis</i> , about. | 20 |
| Specimens of blood tested for typhoid fever. | 10 |
| Specimens showing typhoid | 6 |
| Specimens examined for gonorrhea | 6 |
| Specimens showing gonorrhea | 4 |

Three cases of suspected rabies were tested by inoculation of rabbits, one of which showed rabies.

Total number of examinations, 1126.

Total number of examinations for year ending June 30, 1906, 691.

The special committee on antitoxin, composed of Prof. L. E. Sayre, Doctor Lerrigo, and Doctor Crumbine, then submitted their report, which is as follows:

It is the sense of your committee that in the present condition of the finances of the State Board of Health it would not be possible to take up the large amount of work that would be entailed, or to provide for the expense incurred by this free distribution of antitoxin, and it is therefore recommended that the secretary recommend to the governor in the next biennial report that the legislature provide ways and means for the distribution of antitoxin free to the afflicted poor of the state.

Upon motion, the attorney for the Board, Mr. C. D. Weloh, was authorized to assist the county attorney of Douglas county in the prosecution of the violations of the food and drugs law in the "Hamburg steak" cases.

Upon motion the Board authorized a continuance of the investigation of the streams of the state as begun by Professor Barber of the University and the secretary, which investigation comprises the problems of self-purification of streams and the extent or degree of sewage pollution of such streams as are used for public water supplies.

The secretary was also authorized, in conjunction with Professor Barber, to continue the investigation of the condition of the common drinking cups as found in the railroad trains, in the Union Station at Kansas City, and the public schools at Rosedale, to the extent of twenty-five dollars for the necessary expenses.

Rule 9 of the Board's sanitary rules was amended to read as follows:

RULE 9. *Cattle, Sheep and Pig Pens, Slaughterhouses, etc.* Every per-

son owning, leasing or occupying any place, room or building wherein cattle, sheep or swine are killed or dressed, and every person being the owner, lessee or occupant of any stable wherein animals are kept, or of any market, public or private, shall cause such place, room, building, stable or market to be kept at all times thoroughly cleansed and purified, and all offal, blood, fat, garbage, stable manure or other unwholesome or offensive refuse shall be removed therefrom at least once every twenty-four hours, if used continuously, or, if only used occasionally, within twenty-four hours after using; and the floors of such building, place or premises shall be constructed of cement, so as to prevent the blood, foul liquid or washings from being absorbed. No blood pit, dung pit, offal pit or privy well shall remain or be constructed within any such place, room, or building; nor shall swine be kept in the same enclosure with a slaughterhouse, nor fed there upon the offal of slaughtered animals. Doors and windows must be screened to exclude flies. Unsanitary conditions shall be deemed to exist wherever and whenever any one or more of the following conditions appear or are found, to wit: If the slaughterhouse is dilapidated and in a state of decay; if the floors or side walls are soaked with decaying blood or other animal matter; if efficient fly-screens are not provided; if the drainage of the slaughterhouse or slaughterhouse yard is not efficient; if maggots or filthy pools or hog-wallows exist in the slaughterhouse yard or under the slaughterhouse; if storage hides kept in slaughterhouse are in pools of filth, or infested with maggots, or giving out vile odors; if the water supply used in connection with the cleansing or preparing is not pure and unpolluted; if hogs are kept in the slaughterhouse yard or fed therein on animal offal, or if the odors of putrefaction plainly exist therein; if bones or refuse are not burned, or buried; if dead animals are being fed; if carcasses or parts of carcasses are transported from place to place when not covered with clean white cloths; or if kept in unclean, bad smelling ice boxes, or if kept in unclean storage rooms.

It was moved that the question of a regulation defining the use of the word "compound," as applied to drugs, be deferred to a future meeting.

Upon motion, the following disinterment permits were granted: To remove the body of Clarence Mullendore, who died of membranous croup on the 1st day December, 1885, from Forest Cemetery, Elk county, Kansas, to Howard Cemetery, Elk county, Kansas. To remove the body of Bertha Gochenour, who died of scarlet fever on the 13th day of October, 1902, from Houston Cemetery, Labette county, Kansas, to Beck Cemetery, county of Pickaway, state of Ohio.

The following committee was appointed by the president to audit the bills of the embalmers' examining committee: Drs. H. M. Bentley, J. B. Carver, Clay E. Coburn.

The committee reported that the accounts were correct, and upon motion the accounts were ordered placed on file and the committee discharged.

No other business appearing, upon motion, the Board adjourned.

On Friday, November 15, was held the Fifteenth Annual Conference of State, County and Municipal Health Officers. The meeting was held in Representative Hall, where the following program was rendered:

A. M.**MORNING SESSION.**

- 10:00—Opening remarks by Dr. Charles Lerrigo, resident member State Board of Health, Topeka.
- 10:15—The Registration of Vital Statistics: Problems, Benefits. Dr. E. J. Lutz, secretary Municipal Board of Health, Kansas City.
- 10:40—The Relation of the Health Officer to the Public. Dr. J. W. Graybill, county health officer of Harvey county, Newton.
- 11:00—Laboratory Diagnoses. Dr. S. E. Greenfield, bacteriologist State Board of Health, Topeka.
- 11:20—The Score Card in City Milk Inspection. J. C. Kendall, state dairy commissioner, Manhattan.
- 11:40—Discussion of Papers.

P. M.**AFTERNOON SESSION.**

- 2:00—The Natural Waters of Kansas. Horatio N. Parker, assistant hydrographer United States Geological Survey.
- 2:20—The Municipal Water Supplies of Kansas. Prof. W. C. Hoad, sanitary and civil engineer State Board of Health, Lawrence.
- 2:45—Sewage and Sewage Disposal. Prof. F. O. Marvin, sanitary adviser State Board of Health, Lawrence.
- 3:05—The Bacteriological Examination of Public Water Supplies—Interpretation of Findings. Prof. M. A. Barber, bacteriologist Kansas University Medical School, Rosedale.
- 3:25—The Food and Drugs Law as Applied to Meat and Cereal Products. Prof. J. T. Willard, food analyst State Board of Health, Manhattan.
- 3:45—The Food and Drugs Law and Its Relation to the Special Senses of Sight, Taste and Smell. Prof. E. H. S. Bailey, food analyst State Board of Health, Lawrence.
- 4:00—Some Unforeseen Problems Connected with the Enforcement of the Food and Drugs Law. Prof. L. E. Sayre, drug analyst State Board of Health, Lawrence.
- 4:20—The Food and Drugs Law from the Commercial Chemists' Standpoint. Rudolph Hirsch, chemist, Kansas City, Mo.
- 4:30—Inspection of the Country Slaughterhouse. Dr. E. L. Simonton, county health officer Pottawatomie county, Wamego.
- 4:50—Discussion, led by Dr. Charles S. Huffman, county health officer Cherokee county, Columbus.
- 5:10—Round Table, led by S. J. Crumbine, secretary and chief food and drug inspector State Board of Health, Topeka.
- 5:30—Organization and election of officers.
Business. Adjournment.

The papers and addresses were of a high order of excellence, and of interest and value to all who were privileged to attend. It is to be regretted that a larger number of health officers were not present, but under the present system of compensation for health officers, which in many instances is entirely inadequate, it is nothing short of a hardship for health officers to not only spend the time, but in many instances there is a large expense incident to attending these meetings. It is to be hoped that there may be found a way to pay the expenses of a representative of every local board of health to attend these annual conferences.

The following bills were audited and allowed :

| | |
|----------------------|----------|
| B. J. Alexander..... | \$11 25 |
| C. D. Welch..... | 35 50 |
| A. B. Scott..... | 40 32 |
| J. B. Carlile..... | 32 20 |
| H. M. Bentley..... | 25 44 |
| C. E. Coburn..... | 12 68 |
| C. H. Lerrigo..... | 10 00 |
| G. E. Locke..... | 15 45 |
| J. B. Carver..... | 26 25 |
| Total..... | \$209 09 |

On motion, the Board adjourned.

SECRETARY'S REPORT.

To the President and Members of the State Board of Health:

GENTLEMEN—Since the last meeting of the Board, held on July 2, the work of this department has been very heavy and exacting. New problems under the new food and drugs law and the new water and sewage law have presented themselves almost daily, which, together with the usual duties relating to matters of public health under the general health laws, have kept our entire office force, together with the members of our advisory board, exceedingly busy.

The State Board of Health, and the people of Kansas particularly, are to be congratulated upon having the services of such eminent gentlemen as our experts on the advisory board, and it was indeed a red-letter day for this department when by statutory law our three food and drug analysts were added to the working force of this department.

Many perplexing problems confronting us under the new water and sewage law would have been quite impossible of solution had it not been for the splendid services of our professors, Marvin, Hoad and Barber, and Mr. Parker, of the United States Geological Survey, and the work they have accomplished during this past summer has been of inestimable value to the people of this state. So, I say again, that we are indeed fortunate in being able to have the valuable services of these experts in their various lines. We sincerely hope that at the next legislature a statutory law may add the names of the University engineers to the available forces for work in this department.

The secretary, together with Professor Bailey, had the privilege of attending the great meeting of State and National Food and Dairy Commissioners, held at Jamestown, July 16 to 21. This meeting was probably the largest and most important conference of food officials ever held in this country. The papers and discussions presented were both interesting and instructive, and calculated to be a liberal education along these lines to any one who might attend these meetings. Personally, the secretary feels that he received very great benefit, and it was well worth the time and expense incident thereto. In a general way, the sentiment of the meeting seemed to indicate a desire for uniform laws, rules and regulations as applied to food and drugs, and an insistence on a literal compliance with such laws, particularly as applied to preservatives and false and misleading statements. A spirit of coöperation was manifest between state and national officials, and tentative arrangements made for a coöperation between the state and federal forces. Uniform standards were adopted, which standards have been promulgated by the United States Department of Agriculture in their Circular 19.

The delegation from Kansas was instrumental in having the sanitary provisions incorporated in the resolutions which were finally adopted, and which are as follows:

"WHEREAS, The work organized by the joint committees on standards of this association and the A. O. A. C., bringing together as it does the united experience of state and national food experts and affording to the trade a

full opportunity for suggestion and criticism, best meets our approval as broadly representative of the united judgment of responsible officials and of trade interests; and

"WHEREAS, The secretary of agriculture has been given full authority under the food and drugs act to recognize these committees: therefore, be it

"Resolved, That the secretary of agriculture be earnestly requested to use all reasonable efforts to secure funds to enable him to make use of the aforesaid authority.

"Resolved, That the abuse which has grown up under the guaranty clause of the national food and drugs act, whereby it is made to appear in many cases that the national government guarantees the purity of the food products, calls for correction.

"Resolved, That this association reiterates the necessity for closest co-operation between the states and the national government in the enforcement of pure-food laws, to the end that a system of legislation enacted in the states under their police powers and by the national Congress under power given to regulate interstate commerce shall not come in conflict, and to the end that the joint knowledge and experience of state and federal officials may be brought to bear in the consideration of the many technical and practical questions arising in the enforcement of food laws.

"Resolved further, That the existing unity of sentiment, purpose and efforts between the state and national authorities meets our approval, and is cause for felicitation, and we bespeak the continuance of this hearty co-operation as mutually advantageous.

"Resolved, That we strongly favor such uniformity in national and state food laws as can be made to comprise the strongest and most vigorous features of present state and national laws enacted for the purpose and with the effect of protecting the consuming public against adulteration and fraud, and without imposing any hardship on the trade not necessary to the accomplishment of that purpose; but we as strongly oppose that uniformity in national and state food laws which comes only to relieve the trade from hardship by writing into these laws the weakest and least effective features of present laws, and "such cunning ingenuity" that, while bearing a fair countenance, they carry the elements of disaster in the courts and to the consuming public.

"Resolved, That sanitary inspection should be extended to include small slaughterhouses, small poultry and killing houses, creameries, cheese factories, dairy farms, milk depots, ice cream factories, restaurants, hotels, groceries and meat markets, and all other places where food is produced, manufactured, stored or offered for sale, and that such inspection should include the sanitary condition of the buildings and utensils, herds, workmen and their clothing, and the condition of the raw materials and the finished product.

"Resolved, That the use of mechanical carriers and other devices to obviate the necessity for handling the food products should be encouraged.

"Resolved, That this association hereby tenders its thanks to its officers and executive committees for the splendid program provided for this our annual meeting, and also the officers of this association for the kind, courteous and efficient manner in which they have discharged their duties.

J. Q. EMERY,
M. A. SCOVELL,
A. H. JONES,
R. W. DUNLAP,
W. D. BIGELOW,
Committee."

LABELS.

Among the pressing problems confronting both the wholesale and retail dealers was that of the supplemental label, as to how far and to what extent the law would permit its use. Upon an urgent request of the wholesale druggists, a conference was arranged for in Kansas City on September 14. Most of the wholesale druggists of Kansas City, St. Joseph and the state of Kansas were represented at this meeting. Many questions were

thrashed out and a more thorough understanding arrived at, which resulted in the issuing of the following letter to the wholesale druggists of the state:

"STATE BOARD OF HEALTH,
DEPARTMENT OF FOOD AND DRUGS,
TOPEKA, September 17, 1907.

"To the Wholesale Druggists of Kansas:

"I desire to call your attention to the National F. I. D. No. 43, in which it is held that a supplemental label used to correct labels and cartons on hand at the time of the passage of the food and drugs act shall be corrected to the extent—

"1. That the name and place of manufacture, if mentioned, must be the true name and place.

"2. That any statement respecting the character of the contents which is false or misleading shall be corrected, and that such correction shall secure the obliteration of the misstatement, either by placing the supplemental label or pasteur over it, or obliterating it in some other way.

"3. If the goods contain artificial color or preservatives other than ordinary condimental substances, that fact should appear on the supplemental stamp or pasteur.

"4. If any of the words required to be placed upon drugs and foods in the specific wording of the act do not appear on the label, such as alcohol, opium, etc., the correction must include the enumeration of these substances.

"Goods in the hands of the dealers on the 1st day of October, 1907, that are corrected by supplemental labels or pasters as above indicated, will be salable in this state without limit of time. It is confidently hoped that manufacturers and jobbers supplying you with such goods may be advised of the requirements of this state at an early date, so that goods distributed by you to the retail dealer may not be called into question by this department.

"Bespeaking your hearty coöperation in the enforcement of the food and drugs law, and assuring you it is our earnest desire and purpose to offer you such assistance as may be in our power in the accomplishment of the ends desired, I am

Sincerely yours,

S. J. CRUMBINE, M. D., *Secretary.*"

Immediately after the issuance of this letter a communication was received from Mr. L. F. Kebler, acting chief of the Bureau of Chemistry, United States Department of Agriculture, which seemed to sustain the action taken by this Board concerning labels and false and misleading statements. Mr. Kebler's letter is as follows:

(Copy.)

"U. S. DEPARTMENT OF AGRICULTURE,
WASHINGTON, D. C., September 14, 1907.

"Dr. S. J. Crumbine, *Secretary State Board of Health, Topeka, Kan.:*

"DEAR SIR—In reply to your favor of August 28, I desire to state that the position you have taken relative to misleading statements in connection with Dr. W. E. Caldwell's Syrup of Pepsin and Herb Laxative Compound is in harmony with the position taken by the Department of Agriculture under the national food and drugs act. We have advised all manufacturers to discontinue the use of misrepresentations such as 'positive cure for incurable diseases,' etc. We have been somewhat lenient in this matter, but on and after October 1 this feature of the act will be rigidly enforced. A number of imported drugs, bearing misrepresentations of the above character, have already been reshipped.

"Doctor Sayre has just come in and I am going to talk this matter over with him now. Doctor Sayre informed me relative to the situation of drug products, the manufacturers of which have either gone out of business or the proprietors have died and the business has become defunct. The position he has taken in reference to this matter is similar to that taken under the federal law, namely, that such goods may be sold if, on examination, it is found that they contain certain prescribed ingredients and such ingredi-

ents be declared by proper label. The matter of collecting various defunct patent medicines, or 'orphans,' as they were called in our correspondence, was left to the chairman of the proprietary committee of the national wholesale association. It was intended that he get an idea as to the number of such goods available, and if in any case one gross could be found, suitable methods for analyses would be agreed upon and a label printed to cover the remedy. At this writing Doctor Schieffelin has not made a report relative to the situation, consequently we believe that the number of 'orphans' throughout the country is comparatively small.

Yours very truly,
L. F. KEBLER,
Acting Chief."

Copies of this letter were also sent to wholesale druggists and drug inspectors for their information.

On September 21 a conference was called for the food and drug analysts to outline the policy of collection of samples and analysis of same for the coming fall and winter. Professors Bailey and Sayre were present, Professor Willard being out of the state. Our inspectors were advised of the program agreed upon at this conference.

ALUM IN PICKELS.

Inasmuch as the standards on pickles prohibit the use of mineral substances other than salt, and inasmuch as the secretary is of the opinion that the use of alum in food products makes such products injurious to the health of those consuming same, circular No. 10 was issued, which is as follows :

"CIRCULAR LETTER No. 10.

"STATE BOARD OF HEALTH,
DEPARTMENT OF FOOD AND DRUGS,
TOPEKA, KAN., October 5 1907.

"To the Food and Drug Inspectors:

"It is held by this department that the addition of color to distilled or grain vinegar is illegal, in that its use is for the purpose of making it appear like apple-cider vinegar; therefore, the manufacture or sale in Kansas of distilled or grain or any other kind of vinegar to which color is added is prohibited; provided, manufacturers will be permitted to dispose of such stock now on hand up to November 1, 1907, jobbers until January 1, 1908, and retail dealers until July 1, 1908.

"In the meantime, the purity and strength for all vinegars must be maintained up to the standards, and any sales below the standards will be considered illegal and a cause for action under the law.

"Owing to the fact that most of this season's stock of pickles have been purchased by jobbers and sold to the trade for immediate and future deliveries, and, further, owing to the fact of the short crop, with most of the season's pack processed with alum, it is held that dealers be permitted to dispose of such stocks up to September 1, 1908; provided, that each package shall have on the label in legible type the statement of the presence of alum. It is also understood that any further extension of time will not be considered, and that the law pertaining to the standard quality of pickles will be rigidly enforced after the above date.

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

It was the universal opinion of the food commissioners at Jamestown that the practice of artificially coloring vinegar was illegal in that it was intended to make such vinegars appear as or to represent true fruit vinegar. Previous to the issuing of this letter a conference was called with the three manufacturers of vinegar in

Kansas, and the dates on which such provision might be put into force without too great hardship to dealers with stocks on hand were agreed to as indicated in the circular letter.

On October 11, in company with Professors Sayre and Bailey, the secretary attended a meeting of wholesale and retail dealers and manufacturers at Ottawa, which proved to be both interesting and instructive to the dealers and your officials. This meeting resulted in the issuing of circular letter No. 11, which is as follows:

"CIRCULAR LETTER No. 11.

"KANSAS STATE BOARD OF HEALTH,
"TOPEKA, October 15, 1907.

"To the Food and Drug Inspectors:

"DECISION ON DRUGS.

"1. It is held that when preparations are labeled corresponding to the official title without modification those preparations shall be held to be official standard.

"2. That it shall be the policy of this Board to encourage progress and deprecate retrogression in standards.

"3. U. S. P. preparations whose nonessential constituents differ from the U. S. P., if these be properly stated on the label, may be dispensed when prescribed.

"(Explanation.)—If, for example, fluid extract of buchu be prescribed, the U. S. P. of 1890 requires 94 per cent alcohol as the menstruum; the 1900 U. S. P. requires 70 per cent alcohol; the percentage of buchu leaves contained in both preparations is absolutely the same. If the physician prescribes fluid extract of buchu, the pharmacist is supposed to dispense the 1900 preparations, which contains the 70.5 per cent alcohol, but if the prescriber agrees that the 1890 preparation, which contains 94 per cent alcohol, shall be dispensed—in other words, consents to its use—such usage would be considered legal. (This proposed ruling may be considered as an attempt to avoid needless financial loss of stock on hand October 1, when medicinal standards are fully maintained, but where nonessential constituents may vary from the standards formula.)

"4. If medicinal standards are fully maintained, and there be a slight unimportant variation in detail of manufacture or character of menstruum, such preparations may be sold if properly labeled. In no case, however, can the law be construed as permitting a substitution of such preparation for the official or the use of the term U. S. P. or N. F. upon the labels of such preparations.

"5. Preparations which vary from the official in the nonessential constituents should be labeled and described so as to clearly indicate the character of the variation. For example: Fluidextractum Scillæ and Fluidextractum Scillæ hydroalcoholicum. The first preparation (containing acetic acid as part of the menstruum) employs the official title. The second preparation (unofficial) contains no acetic acid, indicated by the label. A further statement of course is made on the label as to the percentage of alcohol represented.

"6. Preparations not of the U. S. P. standard shall not use the unmodified official title as conveying the idea that such preparations are of official standard. If, for example, a 25 per cent emulsion of cod-liver oil is marketed (the official emulsion being 50 per cent) a proper modification of the official title should be employed upon the label, as well as the statement on the label of the percentage of the essential ingredients.

Addition to Regulation 17.

"After an extended conference with the food and drug analysts, and members of the pharmaceutical profession as represented in the State Board of Pharmacy, the following exemptions are made to Regulation 17:

"Exemptions from the application of this provision are the following:
(a) Family or domestic recipes or prescriptions for immediate or temporary

use, compounded by a regular registered pharmacist or assistant pharmacist. (b) Portions of original packages of nonofficial preparations which are legally labeled. (c) Toilet preparations.

The label on the bottle or container of such drugs or medicines thus dispensed need only designate the contents as prescribed by regular pharmaceutical practice. This exemption, however, does not apply to original packages, or preparations put up as proprietary medicine and offered for sale as such. Nor does it apply to such preparations as contain morphine, cocaine, chloral hydrate, acetanilid or their derivatives.

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

It is believed that this concession to the retail druggists of the state will mollify what at many places amounted to almost open hostility to the entire food and drugs law. Many expressions of good will have been received since the issuing of this circular letter. It was intended by the committee framing the letter that the mere statement of alcohol on certain mixtures and compounds served no purpose in particular except creating considerable of a hardship on the dispensing pharmacist. It should be noted that preparations containing morphine, cocaine, chloral hydrate and acetanilid, which are the principal habit-producing drugs which are to be feared in preparations of this kind, are not exempted under this ruling. We feel that there are no dealers or manufacturers but what are now in hearty sympathy and accord with the entire law, and that as time goes by this law will be the best enforced and the best observed of any law of like importance on the statute books.

On October 12 and 19 a conference was had with representatives of the great brewery interests of the central and middle West, including breweries of Milwaukee, Chicago, St. Louis and Kansas City, in which they submitted their labels and showed their willingness as well as their wisdom in agreeing to comply with the requirements of this department as to the labeling of their products in conformity to the law. After the present stock of "Hop Tea," "Hop Tonic," and similar meaningless and misbranded malt preparations that are now on the Kansas market will have been exhausted, we feel reasonably sure that there will be no further shipments of such class of goods into this state. They have uniformly agreed to put the alcoholic content on the label of such products as are not plainly labeled as to what they are. Compliance then with this agreement will check the whole matter of the sale of such articles, including so-called malts and two-per-cents, up to the officers who are charged with the enforcement of the prohibitory law, with which law this department has nothing to do.

On October 19 the National Biscuit Company, through their general counsel, Mr. Babst, of New York, and United States Senator Hopkins, of Chicago, met the Secretary for a conference on the matter of our regulation 34. They argued that this department had no authority to make or promulgate such a regulation, that it could not be enforced, and that it worked a hardship on manufacturers. On presenting to these gentlemen the alternative of complying with this regulation or to compel dealers to sell their products from the original package, which would practically do away with the time-honored custom of displaying food products in show cases or in other tastefully arranged ways, the eminent gentlemen agreed to comply with the aforesaid regulation rather than accept the alternative.

On November 2 a conference was had with Senator Hooker, of New York, representing the "Jello" people, which, together with several other conferences with manufacturers of patent medicine, have all resulted in these manufacturing interests agreeing to comply with the Board's rules and regulations concerning labels and the eradication of false and misleading statements. It might be remarked that much of the fog of misunderstanding and contention has thus been cleared away by personally meeting the interested parties and an insistence upon the fulfillment of the Board's requirements. These conferences have been held in a spirit of fairness and amiability, and we have usually succeeded in convincing the parties above referred to of the justice and righteousness of our cause.

On October 29 a conference was called of the three analysts for the Board, our attorney, Mr. Rudolph Hirsch, representing the commercial chemists' side of the grocers, and Mr. W. S. Amos, representing the chemical interests of the druggists, for the purpose of reviewing the food standards as laid down in circular No. 19, United States Department of Agriculture, and of making such changes authorized under section 14 of the Kansas food and drugs law as would seem necessary by experience and observation, previous to presenting these standards to the Board for final adoption. It has been thought that these standards should be adopted as a regulation, which under section 3 of our law provides for publication of regulations in the official state paper. With the publication of these standards after they are adopted by the Board and approved by the governor it is thought that they would have a more secure standing in the courts of the state in the case of prosecution of dealers for manufacturing or selling sub-standard food products.

The following standards have been suggested by the committee and recommended for adoption by the Board:

REGULATION 37—FOOD STANDARDS.

I. ANIMAL PRODUCTS.

A. MEATS AND THE PRINCIPAL MEAT PRODUCTS.

(a.) Meats.

1. Meat, flesh, is any clean, sound, dressed, and properly prepared edible part of animals in good health at the time of slaughter, and if it bears a name descriptive of its kind, composition, or origin, it corresponds thereto. The term "animals," as herein used, includes not only mammals, but fish, crustaceans, mollusks, and all other animals used as food.

2. Fresh meat is meat from animals recently slaughtered and properly cooled until delivered to the customer.

3. Cold-storage meat is meat from animals recently slaughtered and preserved by refrigeration until delivered to the customer.

4. Salted, pickled and smoked meats are unmixed meats preserved by salt, sugar, vinegar, spices, or smoke, singly or in combination, whether in bulk or in suitable containers.

Oysters are *Ostrea virginica* (New International Encyclopedia), and contain not less than ten per cent of total solids.

(b.) Manufactured Meats.

1. Manufactured meats are meats not included in paragraphs 2, 3, and 4, whether simple or mixed, whole or comminuted, in bulk, or in suitable containers, with or without the addition of salt, sugar, vinegar, spices, smoke, oils, or rendered fat. If they bear names descriptive of kind, composition or origin, they correspond thereto, and when bearing such descriptive names, if force or flavoring meats are used, the kind and quantity thereof are made known.

(c.) Meat Extracts, Meat Peptones, etc.

(Schedule in preparation.)

(d.) Lard.

1. Lard is the rendered fresh fat from hogs in good health at the time of slaughter, is clean, free from rancidity, and contains, necessarily incorporated in the process of rendering, not more than 1 per cent of substances other than fatty acids and fat.

2. Leaf-lard is lard rendered at moderately high temperatures from the internal fat of the abdomen of the hog, excluding that adherent to the intestines, and has an iodine number not greater than 60.

3. Neutral lard is lard rendered at low temperatures.

B. MILK AND ITS PRODUCTS.

(a.) Milks.

1. Milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than 8.5 per cent of solids not fat, and not less than 3.25 per cent of milk fat.

2. Blended milk is milk modified in its composition so as to have a definite and stated percentage of one or more of its constituents.

3. Skim milk is milk from which a part or all of the cream has been removed, and contains not less than 9.25 per cent of milk solids.

4. Pasteurized milk is milk that has been heated to 149 degrees F. for twenty minutes or 158 degrees F. for ten minutes, and immediately cooled to 60 degrees F., or lower.

5. Sterilized milk is milk that has been heated at the temperature of boiling water or higher for a length of time sufficient to kill all organisms present.

6. Condensed milk, evaporated milk, is milk from which a considerable portion of water has been evaporated and contains not less than 28 per cent of milk solids, of which not less than 27.5 per cent is milk fat.

7. Sweetened condensed milk is milk from which a considerable portion of water has been evaporated and to which sugar (sucrose) has been added, and contains not less than 28 per cent milk solids, of which not less than 27.5 per cent is milk fat.

8. Condensed skim milk is skim milk from which a considerable portion of water has been evaporated.

9. Buttermilk is the product that remains when butter is removed from milk or cream in the process of churning.

10. Goat's milk, ewe's milk, *et cetera*, are the fresh, clean, lacteal secretions, free from colos-

trum, obtained by the complete milking of healthy animals other than cows, properly fed and kept, and conform in name to the species of animal from which they are obtained.

(b.) *Cream.*

1. Cream is that portion of milk, rich in milk fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force, is fresh and clean, and contains not less than 18 per cent of milk fat.

2. Evaporated cream, clotted cream, is cream from which a considerable portion of water has been evaporated.

(c.) *Milk Fat or Butter Fat.*

1. Milk fat or butter fat is the fat of milk and has a Reichert-Meissl number not less than twenty-four (24) and a specific gravity not less than 0.906. $\left(\begin{smallmatrix} 40^{\circ} \text{C} \\ 40^{\circ} \text{C} \end{smallmatrix} \right)$

(d.) *Butter.*

1. Butter is the clean, nonrancid product made by gathering in any manner the fat or fresh or ripened milk or cream into a mass, which also contains a small portion of the other milk constituents, with or without salt, and contains not less than 80 per cent of milk fat. By acts of Congress approved August 2, 1886, and May 9, 1902, butter may also contain added coloring matter.

2. Renovated butter, process butter, is the product made by melting butter and reworking without the addition or use of chemicals or any substances except milk, cream or salt, and contains not more than 16 per cent of water and at least 80 per cent of milk fat.

(e.) *Cheese.*

1. Cheese is the solid and ripened product made by coagulating the casein of milk by means of rennet or acids, with or without the addition or (of) ripening ferments or seasoning. Cheese may also contain harmless vegetable coloring matter.

2. Whole-milk or full-cream cheese is cheese made from milk from which no portion of the fat has been removed, and contains not less than 35 per cent of butter fat.

3. Skim milk cheese is cheese made from milk from which any portion of the fat has been removed.

(f.) *Ice Cream.*

1. Ice cream is a frozen product made from cream and sugar, with or without a natural flavoring, and contains not less than 14 per cent of milk fat.

2. Fruit ice cream is a frozen product made from cream, sugar and sound, clean, mature fruits, and contains not less than 12 per cent of milk fat.

3. Nut ice cream is a frozen product made from cream, sugar and sound, nonrancid nuts, and contains not less than 12 per cent of milk fat.

(g.) *Miscellaneous Milk Products.*

1. Whey is the product remaining after the removal of fat and casein from milk in the process of cheese making.

2. Kumiss is the product made by the alcoholic fermentation of mare's or cow's milk.

II. VEGETABLE PRODUCTS.

A. GRAIN PRODUCTS.

(a.) *Grains and Meals.*

1. Grain is the fully matured, clean, sound, air-dry seed of wheat, maize, rice, oats, rye, buckwheat, barley, sorghum, millet, or spelt.

2. Meal is the clean, sound product made by grinding grain.

3. Flour is the fine, clean, sound product made by bolting wheat meal, and contains not more than 18.5 per cent of moisture, not less than 1.25 per cent of nitrogen, not more than 1 per cent of ash, and not more than 0.50 per cent. of fiber.

4. Graham flour is unbolted wheat meal.

5. Gluten flour is the clean, sound product made from flour by the removal of starch, and contains not less than 5.6 per cent of nitrogen and not more than 10 per cent of moisture.

6. Maize meal, corn meal, Indian corn meal, is meal made from sound maize grain, and contains not more than 14 per cent of moisture, not less than 1.12 per cent of nitrogen, and not more than 1.6 per cent of ash.

7. Rice is the hulled, or hulled and polished, grain of *Oryza sativa*.

8. Oatmeal is meal made from hulled oats, and contains not more than 12 per cent of moisture, not more than 1.6 per cent of crude fiber, not less than 2.24 per cent of nitrogen, and not more than 2.2 per cent of ash.

9. Rye flour is the fine, clean, sound product made by bolting rye meal, and contains not more than 18.5 per cent of moisture, not less than 1.36 per cent of nitrogen, and not more than 1.25 per cent of ash.

10. Buckwheat flour is bolted buckwheat meal, and contains not more than 12 per cent of moisture, not less than 1.28 per cent of nitrogen, and not more than 1.75 per cent of ash.

B. FRUIT AND VEGETABLES.

(a.) *Fruit and Fruit Products.*

(Except fruit juices, fresh, sweet, and fermented, and vinegars.)

1. Fruits are the clean, sound, edible, fleshy fructifications of plants, distinguished by their sweet, acid and ethereal flavors.

2. Dried fruit* is the clean, sound product made by drying mature, properly prepared, fresh fruit in such a way as to take up no harmful substance, and conforms in name to the fruit used in its preparation; sun-dried fruit is dried fruit made by drying without the use of artificial means; evaporated fruit is dried fruit-made by drying with the use of artificial means.

3. Evaporated apples are evaporated fruit made from peeled and cored apples, and contain

*The subject of sulfurous acid in dried fruits is reserved for consideration in connection with the schedule "Preservatives and Coloring Matters."

not more than 27 per cent of moisture, determined by the usual commercial method of drying for four hours at the temperature of boiling water.

(Standards for other dried fruits are in preparation.)

4. Canned fruit is the sound product made by sterilizing clean, sound, properly matured and prepared fresh fruit, by heating, with or without sugar (sucrose) and spices, and keeping in suitable, clean, hermetically sealed containers, and conforms in name to the fruit used in its preparation.

5. Preserve† is the sound product made from clean, sound, properly matured and prepared fresh fruit and sugar (sucrose) sirup, with or without spices or vinegar, and conforms in name to that of the fruit used, and in its preparation not less than forty-five pounds of fruit are used to every fifty-five pounds of sugar.

6. Honey preserve† is preserve in which honey is used in place of sugar (sucrose) sirup.

7. Glucose preserve† is preserve in which a glucose product is used in place of sugar (sucrose) sirup.

8. Jam, marmalade, † is the sound product made from clean, sound, properly matured and prepared fresh fruit and sugar (sucrose), with or without spices or vinegar, by boiling to a pulpy or semisolid consistence, and conforms in name to the fruit used, and in its preparation not less than forty-five pounds of fruit are used to each fifty-five pounds of sugar.

9. Glucose jam, glucose marmalade, † is jam in which a glucose product is used in place of sugar (sucrose).

10. Fruit butter† is the sound product made from fruit juice and clean, sound, properly matured and prepared fruit, evaporated to a semisolid mass of homogeneous consistence, with or without the addition of sugar and spices or vinegar, and conforms in name to the fruit used in its preparation.

11. Glucose fruit butter* is fruit butter in which a glucose product is used in place of sugar (sucrose).

12. Jelly † is the sound, semisolid gelatinous product made by boiling clean, sound, properly matured and prepared fresh fruit with water, concentrating the expressed and strained juice, to which sugar (sucrose) is added, and conforms in name to the fruit used in its preparation.

13. Glucose jelly † is jelly in which a glucose product is used in place of sugar (sucrose).

(b.) *Vegetables and Vegetable Products.*

1. Vegetables are the succulent, clean, sound, edible parts of herbaceous plants used for culinary purposes.

2. Dried vegetables are the clean, sound products made by drying properly matured and prepared vegetables in such a way as to take up no harmful substance, and conform in name to the vegetables used in their preparation; sun-dried vegetables are dried vegetables made by drying without the use of artificial means; evaporated vegetables are dried vegetables made by drying by the use of artificial means.

3. Canned vegetables are sound, properly matured and prepared fresh vegetables, with or without salt, sterilized by heat, with or without previous cooking, in vessels from which they take up no metallic substance, kept in suitable, clean, hermetically sealed containers, are sound, and conform in name to the vegetables used in their preparation.

4. Pickles are clean, sound, immature cucumbers, properly prepared, without taking up any metallic compound other than salt, and preserved in any kind of vinegar, with or without spices; pickled onions, pickled beets, pickled beans, and other pickled vegetables are vegetables prepared as described above, and conform in name to the vegetables used.

5. Salt pickles are clean, sound, immature cucumbers, preserved in a solution of common salt, with or without spices.

6. Sweet pickles are pickled cucumbers or other vegetables in the preparation of which sugar (sucrose) is used.

7. Sauerkraut is clean, sound, properly prepared cabbage, mixed with salt, and subjected to fermentation.

8. Catchup (ketchup, catsup) is the clean, sound product made from the properly prepared pulp of clean, sound, fresh, ripe tomatoes, with spices and with or without sugar and vinegar; mushroom catchup, walnut catchup, *et cetera*, are catchups made as above described, and conform in name to the substances used in their preparation.

C. SUGARS AND RELATED SUBSTANCES.

(a.) *Sugar and Sugar Products—Sugar.*

1. Sugar is the product chemically known as sucrose (saccharose) chiefly obtained from sugar cane, sugar beets, sorghum, maple and palm.

2. Granulated, loaf, cut, milled and powdered sugars are different forms of sugar, and contain at least 99.5 per cent of sucrose.

3. Maple sugar is the solid product resulting from the evaporation of maple sap, and contains in the water-free substance, not less than 0.65 per cent of maple sugar ash.

4. Masseculite, melada, mush sugar and concrete are products made by evaporating the purified juice of a sugar-producing plant, or a solution of sugar, to a solid or semisolid consistence, and in which the sugar chiefly exists in a crystalline state.

Molasses and Refiners' Sirup.

1. Molasses is the product left after separating the sugar from masseculite, melada, mush sugar, or concrete, and contains no more than 25 per cent of water and not more than 5 per cent of ash.

2. Refiners' sirup, treacle, is the residual liquid product obtained in the process of refining raw sugars, and contains not more than 25 per cent of water and not more than 8 per cent of ash.

*The subject of sulfurous acid in dried fruits is reserved for consideration in connection with the schedule "Preservatives and Coloring Matters."

†Products made with mixtures of sugar, glucose and honey, or any two thereof, are reserved for future consideration.

‡Products made with mixtures of sugar, glucose and honey, or any two thereof, are reserved for future consideration.

Sirups.

1. Sirup is the sound product made by purifying and evaporating the juice of a sugar-producing plant without removing any of the sugar.
2. Sugar-cane sirup is sirup made by the evaporation of the juice of the sugar cane or by the solution of sugar-cane concrete, and contains not more than 30 per cent of water and not more than 2.5 per cent of ash.
3. Sorghum sirup is sirup made by the evaporation of sorghum juice or by the solution of sorghum concrete, and contains not more than 30 per cent of water and not more than 2.5 per cent of ash.
4. Maple sirup is sirup made by the evaporation of maple sap or by the solution of maple concrete, and contains not more than 32 per cent of water and not less than 0.45 per cent of maple sirup ash.
5. Sugar sirup is the product made by dissolving sugar to the consistence of a sirup, and contains not more than 35 per cent of water.

(b.) Glucose Products.

1. Starch sugar is the solid product made by hydrolyzing starch or a starch-containing substance until the greater part of the starch is converted into dextrose. Starch sugar appears in commerce in two forms, anhydrous starch sugar and hydrous starch sugar. The former, crystallized without water of crystallization, contains not less than 96 per cent of dextrose and not more than 0.8 per cent of ash. The latter, crystallized with water of crystallization, is of two varieties—70 sugar, also known as brewers' sugar, contains not less than 70 per cent of dextrose and not more than 0.8 per cent of ash; 80 sugar, climax or acme sugar, contains not less than 80 per cent of dextrose and not more than 1.5 per cent of ash. The ash of all these products consists almost entirely of chlorides and sulfates.
2. Glucose, mixing glucose, confectioners' glucose, is a thick, sirupy, colorless product made by incompletely hydrolyzing starch, or a starch-containing substance, and decolorizing and evaporating the product. It varies in density from 41 to 45 degrees Baume at a temperature of 100 degrees F. (37.7 degrees C.), and conforms in density, within these limits, to the degree Baume it is claimed to show, and for a density of 41 degrees Baume contains not more than 21 per cent and for a density of 45 degrees not more than 14 per cent of water. It contains on a basis of 41 degrees Baume not more than 1 per cent of ash, consisting chiefly of chlorides and sulfates.

(c.) Candy.

1. Candy is a product made from saccharine substance or substances with or without the addition of harmless coloring, flavoring, or filling materials and containing no terra alba, barytes, talc, chrome yellow, or other mineral substances, or poisonous colors or flavors, or other ingredients deleterious or detrimental to health, or any vinous, malt or spirituous liquor or compound, or narcotic drug.

(d.) Honey.

1. Honey is the nectar and saccharine exudations of plants gathered, modified, and stored in the comb by honey bees (*Apis mellifica* and *A. dorsata*); is levorotatory, contains not more than 25 per cent of water, not more than 0.25 per cent of ash, and not more than 8 per cent of sucrose.
2. Comb honey is honey contained in cells of comb.
3. Extracted honey is honey which has been separated from the uncrushed comb by centrifugal force or gravity.
4. Strained honey is honey removed from the crushed comb by straining or other means.

D. CONDIMENTS (EXCEPT VINEGAR AND SALT).

(a.) Spices.

1. Spices are aromatic vegetable substances used for the seasoning of food and from which no portion of any volatile oil or other flavoring principle has been removed, and which are clean, sound, and true to name. Compound spice is a mixture of aromatic vegetable substances used for the seasoning of food and from which no portion of any volatile oil or other flavoring principle has been removed, and which are clean, sound and true to name.
2. Allspice, pimento, is the dried fruit of the *Pimenta pimenta* (L.) Karst., and contains not less than 8 per cent of quercitannic acid (*); not more than 6 per cent of total ash, not more than 0.5 per cent of ash insoluble in hydrochloric acid, and not more than 25 per cent of crude fiber.
3. Anise is the fruit of the *Pimpinella anisum* L.
4. Bay leaf is the dried leaf of *Laurus nobilis* L.
5. Capers are the flower buds of *Capparis spinosa* L.
6. Caraway is the fruit of *Carum carvi* L.

Cayenne and Red Peppers.

7. Red pepper is the red, dried, ripe fruit of any species of Capsicum.
8. Cayenne pepper, cayenne, is the dried ripe fruit of *Capsicum frutescens* L., *Capsicum baccatum* L., or some other small-fruited species of Capsicum, and contains not less than 15 per cent of nonvolatile ether extract, not more than 6.5 per cent of total ash, not more than 0.5 per cent of ash insoluble in hydrochloric acid, not more than 1.5 per cent of starch, and not more than 28 per cent of crude fiber.
9. Paprika is the dried ripe fruit of *Capsicum annum* L., or some other large-fruited species of Capsicum, excluding seeds and stems.
10. Celery seed is the dried fruit of *Apium graveolens* L.
11. Cinnamon is the dried bark of any species of the genus *Cinnamomum*, from which the outer layers may or may not have been removed.
12. True cinnamon is the dried inner bark of *Cinnamomum zeylanicum* Breyn.
13. Cassia is the dried bark of various species of *Cinnamomum*, other than *Cinnamomum zeylanicum*, from which the outer layers may or may not have been removed.

* The flavoring extracts herein described are intended solely for food purposes and are not to be confounded with similar preparations described in the Pharmacopoeia for medicinal purposes.

14. Cassia buds are the dried immature fruit of species of *Cinnamomum*.
15. Ground cinnamon, ground cassia, is a powder consisting of cinnamon cassia, or cassia buds, or a mixture of these spices, and contains not more than 6 per cent of total ash and not more than 2 per cent of sand.
16. Cloves are the dried flower buds of *Caryophyllus aromaticus* L., which contain not more than 5 per cent of clove stems, not less than 10 per cent of volatile ether extract, not less than 12 per cent of quercitanic acid,* not more than 8 per cent of total ash, not more than 0.5 per cent of ash insoluble in hydrochloric acid, and not more than 10 per cent of crude fiber.
17. Coriander is the dried fruit of *Coriandrum sativum* L.
18. Cumin seed is the fruit of *Cuminum cyminum* L.
19. Dill seed is the fruit of *Anethum graveolens* L.
20. Fennel is the fruit of *Feniculum feniculum* (L.) Karst.
21. Ginger is the washed and dried or decorticated and dried rhizome of *Zansiber singiber* (L.) Karst., and contains not less than 42 per cent of starch, not more than 8 per cent of crude fiber, not more than 6 per cent of total ash, not more than 1 per cent of lime, and not more than 3 per cent of ash insoluble in hydrochloric acid.
22. Limed ginger, bleached ginger, is whole ginger, coated with carbonate of lime, and contains not more than 10 per cent of ash, not more than 4 per cent of carbonate of lime, and conforms in other respects to the standard for ginger.
23. Horse-radish is the root of *Roripa armoracia* (L.) Hitchcock, either by itself or ground and mixed with vinegar.
24. Mace is the dried arillus of *Myristica fragrans* Houttuyn, and contains not less than 20 nor more than 30 per cent of nonvolatile ether extract, not more than 3 per cent of total ash, and not more than 0.5 per cent of ash insoluble in hydrochloric acid, and not more than 10 per cent of crude fiber.
25. Macassar mace, Papua mace, is the dried arillus of *Myristica argentea* Warb.
26. Bombay mace is the dried arillus of *Myristica malabarica* Lamarck.
27. Marjoram is the leaf, flower and branch of *Majorana majorana* (L.) Karst.
28. Mustard seed is the seed of *Sinapis alba* L. (white mustard), *Brassica nigra* (L.) Koch (black mustard), or *Brassica juncea* (L.) Cosson (black or brown mustard).
29. Ground mustard is a powder made from mustard seed, with or without the removal of the hulls and a portion of the fixed oil, and contains not more than 2.5 per cent of starch and not more than 8 per cent of total ash.
30. Prepared mustard, German mustard, French mustard, mustard paste, is a paste composed of a mixture of ground mustard seed or mustard flour with salt, spices and vinegar, and, calculated free from water, fat and salt, contains not more than 24 per cent of carbohydrates, calculated as starch, determined according to the official methods, not more than 12 per cent of crude fiber nor less than 35 per cent of protein, derived solely from the materials named.
31. Nutmeg is the dried seed of the *Myristica fragrans* Houttuyn, deprived of its testa, with or without a thin coating of lime, and contains not less than 25 per cent of nonvolatile ether extract, not more than 5 per cent of total ash, not more than 0.5 per cent of ash insoluble in hydrochloric acid, and not more than 10 per cent of crude fibre.
32. Macassar nutmeg, Papua nutmeg, male nutmeg, long nutmeg, is the dried seed of *Myristica argentea* Warb. deprived of its testa.

Pepper.

33. Black pepper is the dried immature berry of *Piper nigrum* L., and contains not less than 6 per cent of nonvolatile ether extract, not less than 25 per cent of starch, not more than 7 per cent of total ash, not more than 2 per cent of ash insoluble in hydrochloric acid, and not more than 15 per cent of crude fiber. One hundred parts of the nonvolatile ether extract contain not less than 3.25 parts of nitrogen. Ground black pepper is the product made by grinding the entire berry, and contains the several parts of the berry in their normal proportions.
34. Long pepper is the dried fruit of *Piper longum* L.
35. White pepper is the dried mature berry of *Piper nigrum* L., from which the outer coating or the outer and inner coatings have been removed, and contains not less than 6 per cent of nonvolatile ether extract, not less than 50 per cent of starch, not more than 4 per cent of total ash, not more than 0.5 per cent of ash insoluble in hydrochloric acid, and not more than 5 per cent of crude fibre. One hundred parts of the nonvolatile ether extract contain not less than 4 parts of nitrogen.
36. Saffron is the dried stigma of *Crocus sativus* L.
37. Sage is the leaf of *Salvia officinalis* L.
38. Savory, summer savory, is the leaf, blossom and branch of *Satureja hortensis* L.
39. Thyme is the leaf and tip of blooming branches of *Thymus vulgaris* L.

(b.) Flavoring Extracts.

1. A flavoring extract (a) is a solution in ethyl alcohol of proper strength of the sapid and odorous principles derived from an aromatic plant, or parts of the plant, with or without its coloring matter, and conforms in name to the plant used in its preparation.
2. Almond extract is the flavoring extract prepared from oil of bitter almonds, free from hydrocyanic acid, and contains not less than 1 per cent by volume of oil of bitter almonds.
- 2a. Oil of bitter almonds, commercial, is the volatile oil obtained from the seed of the bitter almond (*mygdalus communis* L.), the apricot (*Prunus armeniaca* L.), or the peach (*Amygdalus persica* L.).
3. Anise extract is a flavoring extract prepared from oil of anise, and contains not less than 3 per cent by volume of oil of anise.
- 3a. Oil of anise is the volatile oil obtained from the anise seed.
4. Celery seed extract is the flavoring extract prepared from celery seed or the oil of celery seed, or both, and contains not less than 0.3 per cent by volume of oil of celery seed.
- 4a. Oil of celery seed is the volatile oil obtained from celery seed.
5. Cassia extract is the flavoring extract prepared from oil of cassia, and contains not less than 2 per cent by volume of oil of cassia.

* Calculated from the total oxygen absorbed by the aqueous extract.

5a. Oil of cassia is the lead-free volatile oil obtained from the leaves or bark of *Cinnamomum cassia* Bl., and contains not less than 75 per cent by weight of cinnamic aldehyde.

6. Cinnamon extract is the flavoring extract prepared from oil of cinnamon, and contains not less than 2 per cent by volume of oil of cinnamon.

6a. Oil of cinnamon is the lead-free volatile oil obtained from the bark of the Ceylon cinnamon (*Cinnamomum zeylanicum* Breyne), and contains not less than 65 per cent by weight of cinnamic aldehyde, and not more than 10 per cent by weight of eugenol.

7. Clove extract is the flavoring extract prepared from oil of cloves, and contains not less than 2 per cent by volume of oil of cloves.

7a. Oil of cloves is the lead-free volatile oil obtained from cloves.

8. Ginger extract is the flavoring extract prepared from ginger, and contains in each 100 cubic centimeters the alcohol-soluble matters from not less than 20 grams of ginger.

9. Lemon extract is the flavoring extract prepared from oil of lemon, or from lemon peel, or both, and contains not less than 5 per cent by volume of oil of lemon.

9a. Oil of lemon is the volatile oil obtained, by expression or alcoholic solution, from the fresh peel of the lemon (*Citrus limonum* L.), has an optical rotation (25 degrees C.) of not less than plus 60 degrees in a 100-millimeter tube, and contains not less than four per cent by weight of citral.

10. Terpeneless extract of lemon is the flavoring extract prepared by shaking oil of lemon with dilute alcohol, or by dissolving terpeneless oil of lemon in dilute alcohol, and contains not less than 0.2 per cent by weight of citral derived from oil of lemon.

10a. Terpeneless oil of lemon is oil of lemon from which all or nearly all of the terpenes have been removed.

11. Nutmeg extract is the flavoring extract prepared from oil of nutmeg, and contains not less than 2 per cent by volume of oil of nutmeg.

11a. Oil of nutmeg is the volatile oil obtained from nutmegs.

12. Orange extract is the flavoring extract prepared from oil of orange, or from orange peel, or both, and contains not less than 5 per cent by volume of oil of orange.

12a. Oil of orange is the volatile oil obtained, by expression or alcoholic solution, from the fresh peel of the orange (*Citrus aurantium* L.), and has an optical rotation (25 degrees C.) of not less than plus 35 degrees in a 100-millimeter tube.

13. Terpeneless extract of orange is the flavoring extract prepared by shaking oil of orange with dilute alcohol, or by dissolving terpeneless oil of orange in dilute alcohol, and corresponds in flavoring strength to orange extract.

13a. Terpeneless oil of orange is oil of orange from which all or nearly all of the terpenes have been removed.

14. Peppermint extract is the flavoring extract prepared from oil of peppermint, or from peppermint, or both, and contains not less than 3 per cent by volume of oil of peppermint.

14a. Peppermint is the leaves and flowering tops of *Mentha piperita* L.

14b. Oil of peppermint is the volatile oil obtained from peppermint, and contains not less than 50 per cent by weight of menthol.

15. Rose extract is the flavoring extract prepared from otto of roses, with or without red rose petals, and contains not less than 0.4 per cent by volume of otto of roses.

15a. Otto of roses is the volatile oil obtained from the petals of *Rosa damascena* Mill, *R. certifolia* L., or *R. moschata* Herrm.

16. Savory extract is the flavoring extract prepared from oil of savory, or from savory, or both, and contains not less than 0.35 per cent by volume of oil of savory.

16a. Oil of savory is the volatile oil obtained from savory.

17. Spearmint extract is the flavoring extract prepared from oil of spearmint, or from spearmint, or both, and contains not less than 3 per cent by volume of oil of spearmint.

17a. Spearmint is the leaves and flowering tops of *Mentha spicata* L.

17b. Oil of spearmint is the volatile oil obtained from spearmint.

18. Star anise extract is the flavoring extract prepared from oil of star anise, and contains not less than 3 per cent by volume of oil of star anise.

18a. Oil of star anise is the volatile oil distilled from the fruit of the star anise (*Illicium verum* Hook).

19. Sweet basil extract is the flavoring extract prepared from oil of sweet basil, or from sweet basil, or both, and contains not less than 0.1 per cent by volume of oil of sweet basil.

19a. Sweet basil, basil, is the leaves and tops of *Ocimum basilicum* L.

19b. Oil of sweet basil is the volatile oil obtained from basil.

20. Sweet marjoram extract, marjoram extract, is the flavoring extract prepared from the oil of marjoram, or from marjoram, or both, and contains not less than 1 per cent by volume of oil of marjoram.

20a. Oil of marjoram is the volatile oil obtained from marjoram.

21. Thyme extract is the flavoring extract prepared from oil of thyme, or from thyme, or both, and contains not less than 0.2 per cent by volume of oil of thyme.

21a. Oil of thyme is the volatile oil obtained from thyme.

22. Tonka extract is the flavoring extract prepared from tonka bean, with or without sugar or glycerin, and contains not less than 0.1 per cent by weight of coumarin extracted from the tonka bean, together with a corresponding proportion of the other soluble matters thereof.

22a. Tonka bean is the seed of *Coumarouna odorata* Aublet (*Dipteryx odorata* (Aubl.) Willd).

23. Vanilla extract is the flavoring extract prepared from vanilla bean, with or without sugar or glycerin, and contains in 100 cubic centimeters the soluble matters from not less than 10 grams of the vanilla bean.

23a. Vanilla bean is the dried, cured fruit of *Vanilla planifolia* Andrews.

24. Wintergreen extract is the flavoring extract prepared from oil of wintergreen, and contains not less than 3 per cent by volume of oil of wintergreen.

24a. Oil of wintergreen is the volatile oil distilled from the leaves of the *Gaultheria procumbens* L.

(c.) Edible Vegetable Oils and Fats.

1. Olive oil is the oil obtained from the sound, mature fruit of the cultivated olive tree (*Olea europaea* L.) and subjected to the usual refining processes; is free from rancidity; has a refractive index (25 degrees C.) not less than 1.4660 and not exceeding 1.4680, and an iodine number not less than 79 and not exceeding 90.

2. Virgin olive oil is olive oil obtained from the first pressing of carefully selected, hand-picked olives.

3. Cottonseed oil is the oil obtained from the seeds of cotton plants (*Gossypium hirsutum* L., *G. barbadense* L., or *G. herbaceum* L.) and subjected to the usual refining processes; is free from rancidity; has a refractive index (25 degrees C.) not less than 1.4700 and not exceeding 1.4725, and an iodine number not less than 104 and not exceeding 110.

4. "Winter-yellow" cottonseed oil is expressed cottonseed oil from which a portion of the stearin has been separated by chilling and pressure, and has an iodine number not less than 110 and not exceeding 116.

5. Peanut oil, arachis oil, earthnut oil, is the oil obtained from the peanut (*Arachis hypogaea* L.) and subjected to the usual refining processes; is free from rancidity; has a refractive index (25 degrees C.) not less than 1.4690 and not exceeding 1.4707, and an iodine number not less than 87 and not exceeding 100.

6. "Cold-drawn" peanut oil* is a peanut oil obtained by pressure without heating.

7. Sesame oil, gingill oil, teal oil, is the oil obtained from the seeds of the sesame plants, *Sesamum orientale* (L.) and *S. radiatum* (Schum and Thonn.) and subject to the usual refining processes; is free from rancidity; has a refractive index (25 degrees C.) not less than 1.4704 and not exceeding 1.4717, and an iodine number not less than 108 and not exceeding 112.

8. "Cold-drawn" sesame oil* is sesame oil obtained by pressure without heating.

9. Poppy-seed oil* is the oil obtained from the seed of the poppy, *Papaver somniferum* (L.), subjected to the usual refining processes and free from rancidity.

10. White poppy-seed oil, "cold-drawn" poppy-seed oil* is poppy-seed oil of the first pressing without heating.

11. Coconut oil* is the oil obtained from the kernels of the coconut, *Cocos nucifera* (L.), and subjected to the usual refining processes and free from rancidity.

12. Cochin oil is coconut oil prepared in Cochin (Malabar).

13. Ceylon oil is coconut oil prepared in Ceylon.

14. Copra oil is coconut oil prepared from Copra, the dried kernels of the coconut.

15. Rape-seed oil, colza oil,* is the oil obtained from the seeds of the rape plant, *Brassica napus* (L.), and subjected to the usual refining processes and free from rancidity.

16. "Cold-drawn" rape-seed oil* is rape-seed oil obtained by the first pressing without heating.

17. Sunflower oil* is the oil obtained from the seeds of the sunflower, *Helianthus annuus* (L.), and subjected to the usual refining processes and free from rancidity.

18. "Cold-drawn" sunflower oil* is sunflower oil obtained by the first pressing without heating.

19. Maize oil, corn oil,* is the oil obtained from the germ of the maize, *Zea mays* (L.), and subjected to the usual refining processes and free from rancidity.

20. Cocoa butter, cacao butter, is the fat obtained from roasted, sound cocoa beans and subjected to the usual refining processes; is free from rancidity; has a refractive index (40 degrees C.) not less than 1.4566 and not exceeding 1.4598, an iodine number not less than 33 and not exceeding 38, and a melting point not lower than 30 degrees C. nor higher than 35 degrees C.

21. Cottonseed-oil stearin is the solid product made by chilling cottonseed oil and separating the solid portion by filtration, with or without pressure, and having an iodine number not less than 85 and not more than 100.

E. TEA, COFFEE AND COCOA PRODUCTS.

(a.) Tea.

1. Tea is the leaves and leaf buds of different species of *Thea*, prepared by the usual trade processes of fermenting, drying and firing; meets the provisions of the act of Congress, approved March 2, 1897, and the regulations made in conformity therewith (Treasury Department Circular 16, February 6, 1906); conforms in variety and place of production to the name it bears, and contains not less than 4 nor more than 7 per cent of ash.

(b.) Coffee.

1. Coffee is the seed of *Coffea arabica* (L.) or *Coffea liberica* (Bull.) freed from all but a small portion of its spermoderm, and conforms in variety and place of production to the name it bears.

2. Roasted coffee is coffee which by the action of heat has become brown and developed its characteristic aroma, and contains not less than 10 per cent of fat and not less than 3 per cent of ash.

(c.) Cocoa and Cocoa Products.

1. Cocoa beans are the seeds of the cocoa tree, *Theobroma cacao* L.

2. Cocoa nibs, cracked cocoa, is the roasted, broken cocoa bean freed from its shell or husk.

3. Chocolate, plain chocolate, bitter chocolate, chocolate liquor, bitter chocolate coatings, is the solid or plastic mass obtained by grinding cocoa nibs without the removal of fat or other constituents except the germ, and contains not more than 3 per cent of ash insoluble in water, 3.50 per cent of crude fiber and 9 per cent of starch, and not less than 45 per cent of cocoa fat.

4. Sweet chocolate, sweet chocolate coatings, is chocolate mixed with sugar (sucrose), with or without the addition of cocoa butter, spices or other flavoring materials, and contains in the sugar- and fat-free residue no higher percentage of either ash, fiber or starch than is found in the sugar- and fat-free residue of chocolate.

5. Cocoa, powdered cocoa, is cocoa nibs, with or without the germ, deprived of a portion of its fat and finely pulverized, and contains percentages of ash, crude fiber, and starch corresponding to those in chocolate after correction for fat removed.

6. Sweet cocoa, sweetened cocoa, is cocoa mixed with sugar (sucrose), and contains not more than 60 per cent of sugar (sucrose), and in the sugar- and fat-free residue no higher percentage of either ash, crude fiber, or starch than is found in the sugar- and fat-free residue of chocolate.

*The fixing of limits for chemical and physical properties is reserved for future consideration.

F. BEVERAGES.

(a.) Fruit Juices—Fresh, Sweet and Fermented.

(1) Fresh and (2) Sweet.

(Schedules in preparation.)

(3) Fermented Fruit Juices.

1. Wine is the product made by the normal alcoholic fermentation of the juice of sound, ripe grapes, and the usual cellar treatment,* and contains not less than 7 nor more than 16 per cent of alcohol, by volume, and in 100 cubic centimeters (20 degrees C.) not more than 0.1 gram of sodium chlorid nor more than 0.2 gram of potassium sulfate; and for red wine not more than 0.14 gram, and for white wine not more than 0.12 gram of volatile acids produced by fermentation and calculated as acetic acid. Red wine is wine containing the red coloring matter of the skins of grapes. White wine is wine made from white grapes or the expressed fresh juice of other grapes.

2. Dry wine is wine in which the fermentation of the sugars is practically complete and which contains in 100 cubic centimeters (20 degrees C.) less than 1 gram of sugars, and for dry red wine not less than 0.16 gram of grape ash and not less than 1.6 grams of sugar-free grape solids, and for dry white wine not less than 0.13 gram of grape ash and not less than 1.4 grams of sugar-free grape solids.

3. Fortified dry wine is dry wine to which brandy has been added but which conforms in all other particulars to the standard of dry wine.

4. Sweet wine is wine in which the alcoholic fermentation has been arrested, and which contains, in 100 cubic centimeters (20 degrees C.) not less than 1 gram of sugars, and for sweet red wine not less than 0.16 gram of grape ash, and for sweet white wine not less than 0.13 gram of grape ash.

5. Fortified sweet wine is sweet wine to which wine spirits have been added. By act of Congress, "sweet wine" used for making fortified sweet wine and "wine spirits" used for such fortification are defined as follows (sec. 43, act of October 1, 1890, 26 Stat. 567, as amended by section 68, act of August 27, 1894, 28 Stat. 509, and further amended by act of Congress approved June 7, 1906): "That the wine spirits mentioned in section 42 of this act is the product resulting from the distillation of fermented grape juice to which water may have been added prior to, during or after fermentation, for the sole purpose of facilitating the fermentation and economical distillation thereof, and shall be held to include the products from grapes or their residues, commonly known as grape brandy; and the pure sweet wine, which may be fortified free of tax, as provided in said section, is fermented grape juice only, and shall contain no other substance whatever introduced before, at the time of, or after fermentation, except as herein expressly provided; and such sweet wine shall contain not less than 4 per centum of saccharine matter, which saccharine strength may be determined by testing with Balling's saccharometer or must scale, such wine, after the evaporation of the spirits contained therein, and restoring the sample tested to its original volume by addition of water; provided, that the addition of pure boiled or condensed grape must or pure crystallized cane or beet sugar or pure anhydrous sugar to the pure grape juice aforesaid, or the fermented product of such grape juice prior to the fortification provided by this act for the sole purpose of perfecting sweet wine according to commercial standard, or the addition of water in such quantities only as may be necessary in the mechanical operation of grape conveyers, crushers and pipes leading to fermenting tank, shall not be excluded by the definition of pure sweet wine aforesaid; provided, however, that the cane or beet sugar, or pure anhydrous sugar, or water so used, shall not in either case be in excess of 10 per centum of the weight of the wine to be fortified under this act; and provided further, that the addition of water herein authorized shall be under such regulations and limitations as the commissioner of internal revenue, with the approval of the secretary of the treasury, may from time to time prescribe; but in no case shall such wines to which water has been added be eligible for fortification under the provisions of this act where the same, after fermentation and before fortification, have an alcoholic strength of less than 5 per centum of their volume."

6. Sparkling wine is wine in which the after part of the fermentation is completed in the bottle, the sediment being disgorged and its placed supplied by wine or sugar liquor, and which contains in 100 cubic centimeters (20 degrees C.) not less than 0.12 gram of grape ash.

7. Modified wine, ameliorated wine, corrected wine, is the product made by the alcoholic fermentation, with the usual cellar treatment, of a mixture of the juice of sound, ripe grapes with sugar (sucrose), or a sirup containing not less than 65 per cent of sugar (sucrose), and in quantity not more than enough to raise the alcoholic strength after fermentation to 11 per cent by volume.

8. Raisin wine is the product made by the alcoholic fermentation of an infusion of dried or evaporated grapes, or a mixture of such infusion or of raisins with grape juice.

G. VINEGAR.

1. Vinegar, cider vinegar, apple vinegar, is the product made by the alcoholic and subsequent acetous fermentations of the juice of apples, is levorotatory, and contains not less than 4 grams of acetic acid, not less than 1.6 grams of apple solids, of which not more than 50 per cent are reducing sugars, and not less than 0.25 gram of apple ash in 100 cubic centimeters (20 degrees C.) and the water-soluble ash from 100 cubic centimeters (20 degrees C.) of the vinegar contains not less than 10 milligrams of phosphoric acid (P_2O_5), and requires not less than 30 cubic centimeters of decinormal acid to neutralize its alkalinity.

2. Wine vinegar, grape vinegar, is the product made by the alcoholic and subsequent acetous fermentations of the juice of grapes, and contains in 100 cubic centimeters (20 degrees C.) not less than 4 grams of acetic acid, not less than 1 gram of grape solids, and not less than 0.13 gram of grape ash.

3. Malt vinegar is the product made by the alcoholic and subsequent acetous fermentations, without distillation, of an infusion of barley malt or cereals whose starch has been converted by malt, is dextrorotatory, and contains in 100 cubic centimeters (20 degrees C.) not less than 4 grams of acetic acid, not less than 2 grams of solids, and not less than 0.2 gram of ash; and the water-soluble ash from 100 cubic centimeters (20 degrees C.) of the vinegar contains not less than 9

* The subject of sulfurous acid in wine is reserved for consideration in connection with the schedule "Preservatives and Coloring Matters."

milligrams of phosphoric acid (P_2O_5), and requires not less than 4 centimeters of decinormal acid to neutralize its alkalinity.

4. Sugar vinegar is the product made by the alcoholic and subsequent acetous fermentations of solutions of sugar, sirup, molasses, or refiners' sirup, and contains in 100 cubic centimeters (20 degrees C.) not less than 4 grams of acetic acid.

5. Glucose vinegar is the product made by the alcoholic and subsequent acetous fermentations of solutions of starch sugar or glucose, is dextrorotatory, and contains in 100 cubic centimeters (20 degrees C.) not less than 4 grams of acetic acid.

6. Spirit vinegar, distilled vinegar, grain vinegar, is the product made by the acetous fermentation of dilute distilled alcohol, and contains in 100 cubic centimeters (20 degrees C.) not less than 4 grams of acetic acid.

III. SALT.

1. Table salt, dairy salt, is fine-grained crystalline salt, containing, on a water-free basis, not more than 1.4 per cent of calcium sulphate ($CaSO_4$), nor more than 0.5 per cent of calcium and magnesium chlorides ($CaCl_2$ and $MgCl_2$), nor more than 0.1 per cent of matter insoluble in water.

It is noted that the only changes made are those of the standards for oysters, the butter and cheese standards revised to conform to the standards adopted in the state dairy commissioner's law passed at the last session of the legislature, pastuerized milk, and compound spice. It is suggested that these standards be adopted as regulation 37.

It is also recommended that regulation 38 be adopted, to read as follows:

"A compound spice which is named after a single spice shall be named after the predominant spice, and all others present shall be stated on the label."

WATER AND SEWAGE LAW.

On July 6 permission was granted Mankato for the extension of their water supply as per plans and specifications and information placed on file in this office.

On July 9 permission was granted the cities of Labanon and El Dorado to extend their water supplies as per plans and specifications placed on file in this office.

On July 9 the commission, composed of the governor, the attorney-general and the secretary of the State Board of Health, granted permission to the city of Winfield to discharge untreated sewage from their new sewer system into the Walnut river, for a period of two years.

Upon the same date, the commission granted permission to the city of Wichita to discharge untreated sewage from the extension of their sanitary sewer system into the Arkansas river for a period of two years.

On August 16 the commission granted permission to the A. T. & S. F. Railway Company to discharge untreated sewage from the depot at Peabody into Doyle creek for a period of two years.

On November 5 the commission granted permission to the city of El Dorado to discharge untreated sewage from the extension of the sewer system into Walnut river for a period of two years, with the distinct provision that at the expiration of such time purification works should be installed and in operation.

On October 29 permission was granted the city of Almena to install water works, with the approval of their water supply.

On October 18 the city of Marion was granted permission for the extension of their water supply, conditioned on the approval of the analytical chemists of the Board as to wholesomeness and quantity of the supply.

SANITATION AND PUBLIC HEALTH PROBLEMS.

On September 4 a visit was made to Yates Center, at the instance of Senator Martin of that city. The usual cesspool problem was encountered, and the usual number of alley nuisances which ordinarily accompany a city of that size which has no regular sewer system. Recommendations were made to the county board of health, which were carried out, and the nuisances at least temporarily relieved.

During August and September there came to this office complaints concerning the water supply of the city of Lawrence. Among the various complaints was one from ex-Senator W. A. Harris, in which he made an urgent request that I go to Lawrence immediately for the purpose of an investigation. Accordingly the trip was made, and in company with our sanitary engineer, Professor Hoad and Senator Harris we made a critical and careful inspection of the water supply of that city. Repeated examinations by

the bacteriologist at the University had disclosed the fact that the water was highly polluted with sewage. These findings were soon accounted for when the engineer acknowledged that he had been pumping water directly from the river into the settling basin, mixing it with the water pumped from their wells. His excuse for so doing was that the supply to be taken from the wells was entirely inadequate for meeting the demands of the hot, dry summer. Inasmuch as the purity and wholesomeness of the Lawrence water supply was of importance not only to the citizens of Lawrence, but to almost every town or community in the state, by reason of the State University, that receives its supply from this source, it was thought that the matter was one of more than local importance, demanding some immediate action by this Board. Accordingly the following letter was sent to the president of the waterworks:

"TOPEKA, August 27, 1907.

"C. F. Street, President Lawrence Waterworks, Lawrence, Kan.:

"DEAR SIR—I have to advise you that complaint has been made to this office alleging that the water supply furnished the city of Lawrence by your company is unwholesome and unsafe by reason of pollution with sewage.

"Recent and repeated bacteriological examinations have been made of the water, not only by the laboratory of the State University, but by the Columbus Laboratory in Chicago, Ill., with positive findings of the *Bacillus coli* and the fermentation germs.

"Yesterday, in company with the Board's sanitary engineer and ex-Senator Harris, of Lawrence, we visited your plant and found that the present water supply is entirely inadequate to supply the growing and increasing demand of the city of Lawrence. It was admitted that the water had been pumped direct from the river, mixing with the water from the wells, into the settling basins, the greater portion of the summer, and thus has been brought about the pollution of the water supply by the sewage-polluted waters of the Kansas river.

"The sworn statements on file in this office in making returns of information required under the new water and sewage law alleges that the auxiliary supply, namely, the Kansas river, is and has been used only in cases of great conflagration, not more than once or twice a year. It would seem from our investigation that this statement is not in accordance with the facts in the case and demands an explanation.

"This is to notify you that the pumping of water direct from the Kansas river will not be permitted, except in cases of the most dire necessity, such as that of a very great conflagration; and that immediately before doing so, you must notify the mayor of the city of Lawrence, in order that due notice may be given the citizens of the city, that they may have the opportunity of protecting themselves from the danger of sewage-contaminated water, by boiling same before using for domestic purposes. We will also require that immediate notice shall be given to the secretary of the State Board of Health of the use of such polluted water, giving the reason for its use and the length of time during which such auxiliary water supply is used.

"In the meantime immediate steps should be taken to increase the available amount of well water to such an extent that it will be entirely unnecessary to call upon the present auxiliary supply.

"An early reply, indicating your purpose in the matter, will be highly appreciated.

Very truly yours,

"S. J. CRUMBINE, M. D., Secretary.

The week following, at a meeting of the city council, the Board was represented by Professor Hoad, sanitary engineer, and Professor Barber, bacteriologist, and your secretary, and the entire condition was presented to the city authorities, with the recommendation that the company supply wholesome water to the city of Lawrence and immediately sink new wells in order that the supply might be adequate and meet the demands, and that the further pumping of water direct from the river be prohibited except under the most dire necessity. We have authority for saying that the Lawrence Water Company is now engaged in sinking a new well, and it is confidently hoped and expected that this new source of supply will meet the requirements of the city.

PURIFICATION OF STREAMS.

In order that this department might have some definite data as to the degree of purification of running streams containing sewage, and to determine also the approximate degree of pollution which the discharge of sewage from the city of Topeka contributes to the Kansas river, as well as the state of the water upon its arrival at Lawrence, a trip upon the Kansas river was planned by the secretary, who, in company with Professor Barber, on September 18, started in a frail steel craft to go down the river, taking samples at regular intervals between Topeka and Lawrence. The first samples were taken west of the city of Topeka, before being contaminated by the city sewage. After that samples were taken every few miles, some eighty odd being taken during the entire trip. The results of the analyses have not yet been completely worked out, but sufficient data is at hand to warrant the assertion that water in the Kansas river before reaching Topeka is not a pure, wholesome water; that its pollution is largely increased by the sewage from the city of Topeka, and that the purification of such sewage is very slight between the city and Lawrence, although there appears to be some slight purification. As time is probably the most important element in the purification of streams, and as the Kansas river is a swift-running stream, sufficient time cannot elapse between the flow of water between the two places to hang very much hope, if any, upon the purification of sewage contamination in that distance. The specific data of this experiment will be published at a later date in the *Bulletin*. Similar experiments are contemplated in a number of other important streams of the state. In this connection we might venture the prophecy that the conditions in other streams which are used as a source of water supply are about the same as the Kansas river; that is to say, they are entirely unfit for a water supply without a system of efficient filtration. Moreover, I believe that the time has arrived when the State Board of Health should announce definitely their attitude on stream pollution, and go on record to the effect that the further pollution of the natural waters of this state is a crime against humanity, and must cease. It is to be noted that the health commissioner of Pennsylvania has ordered that all untreated sewage discharged into the natural waters of the state must cease by a certain date. In other words, that sewage purification plants must be constructed and in operation within a specified length of time, five years being the limit which is accorded to the city of Philadelphia. I strongly recommend that the Board give serious thought to this matter, so that when the data which will be at hand concerning the condition of the streams in this state after further examinations have been made it may form the basis of an intelligent, righteous action, in which the water supplies may have the protection which the people are expecting the State Board of Health should afford them.

STATE INSTITUTIONS.

In company with your committee on state institutions, the secretary visited the State Hospital at Osawatomie and the State Penitentiary at Lansing. The reports of these visitations will be made by the committee. It is urgently recommended that these visits to state institutions be made by the members of this Board at such times and at such intervals as seem to be necessary. There can be no doubt but that much good can be accomplished and assistance lent to the members of the Board of Control in getting such needed additions to these places as the cases seem to urgently demand.

EMBALMERS' EXAMINING COMMITTEE.

The secretary and treasurer of the embalmers' examining committee have filed their report in this office. Inasmuch as the last legislature passed a law creating a State Board of Examining Embalmers, the committee created by this Board has no further reason for existence. It is therefore recommended that an auditing committee be appointed by the Board to audit the accounts and vouchers of the committee, reporting back to the Board their findings, with the recommendation of the discharge of the committee.

| Improvements contemplated by city or company. | Amount appropriated. |
|----------------------------------------------------|------------------------------------------------------------------------|
| Probably none. | (Cot Bricot Dr.) resides not of year. among water |
| Probably none. | Dr. H. O. town |
| Expect to improve basins and probably add filters. | Dr. Six or for 12 years. |
| | Dr. Little |
| | |

in the working force of the office. Much of the information required to be filed under this law has not yet been checked up, notwithstanding the services of Mr. Parker and Professor Hoad for a considerable period of time in assisting in this work. There yet remains a large amount of work to be done and a number of cities yet to report.

SLAUGHTERHOUSE INSPECTION.

It is extremely gratifying to note that the orders of the Board concerning the inspection of the country slaughterhouses by health officers, and the fumigation of schoolhouses before the fall term of school should begin, have been quite generally observed throughout the state, particularly that of the inspection of slaughterhouses. I want to especially commend in this public manner the most excellent work done in inspection by the health officers of Cherokee, Harvey, Pottawatomie and Marshall counties. Many slaughterhouses have been condemned and new ones built in their stead, and altogether the sanitary conditions surrounding our meat products have been immensely improved. Indeed, it is quite impossible to tell in normal English the dreadful conditions in which some of these places have been kept for years.

This report would not be complete without speaking of the excellent work being done by the food and drug inspectors of this Board. It is a matter of justifiable pride to this department as we look back over the vast amount of work that has been done in this field, the unanimity of purpose among the dealers and manufacturers in general to cooperate with this department, and the vastly changed conditions that have been brought about without a single prosecution before November 1, 1907. It is to be expected that the enforcement of such a law, affecting such a large number of manufacturers and dealers, could not be continued without an occasional prosecution, and I have to report that eleven such prosecutions have recently been inaugurated against butchers for the use of preservatives in meat products, and one against a druggist for misbranding.

Respectfully submitted.

S. J. CRUMBINE, M. D.,
Secretary.

MINUTES OF ANNUAL MEETING.

The State Board of Health met in annual session in the office of the secretary, Monday, June 22, at two P. M. In the absence of the president, Doctor Carlile; the vice president, Doctor Scott, presided.

Upon roll call all the members of the Board were found to be present except Doctors Carlile, Alexander and Locke.

The minutes of the quarterly meeting in November, 1907, were then read, approved, and ordered placed on file.

The secretary then read his annual report, and upon motion it was received and ordered placed on file. The recommendations embodied in the secretary's report were then taken up for discussion.

Upon motion the following resolution was adopted :

Resolved, That the matter of delinquent health officers be turned over to the attorney to investigate, with instructions to see that the reports are filed, and, if advisable, that procedure be instituted to enforce the penalty.

The names of the delinquent health officers are J. M. Parrington, M. D., Emporia; J. D. Colt, M. D., Manhattan; C. J. Forney, M. D., Lyons; and W. B. Callender, Stockton.

Upon motion the secretary was selected as the representative of the Kansas State Board of Health to attend the International Congress on Tuberculosis, which motion included that his actual expenses be paid. Dr. Charles S. Huffman was chosen as alternate.

It was moved and seconded, and unanimously carried, that the chairman appoint a committee to cooperate with a similar committee appointed by the State Veterinary Association, to the end that future legislation be proposed for the elimination of the tuber-

cular dairy cow. Whereupon the chair appointed Doctors Coburn, Lerrigo and Crumbine as the committee.

The Board then formally indorsed the action of the secretary in deputizing Mr. Wolfe, inspector of the State Board of Pharmacy, as an inspector for this Board under the food and drugs law.

Upon motion, the Board was instructed to draft a rule or resolution in regard to teachers of public or private schools suffering from tuberculosis, and to confer with Superintendent Fairchild, in order to secure its enforcement. Accordingly, the secretary presented the following resolution, which, upon motion, was unanimously adopted:

WHEREAS, Tuberculosis is now generally recognized as a communicable disease; and

WHEREAS, It has come to our notice that teachers suffering from tuberculosis have been employed in the public and private schools of this state: therefore, be it

Resolved, That school boards, boards of education, superintendents of institutions, and others who engage teachers as such, are requested to make careful inquiry as to the health of the applicants, especially whether such applicant is suffering from tuberculosis.

The secretary was instructed to reply to a letter from the Corn Syrup Refining Company, to the effect that at present this Board would follow the decision of the National Food and Drug Inspection Board in regard to the ruling on corn syrup.

The report of the bacteriologist was then read and ordered placed on file.

Following this the reports of Professors Bailey and Williard, food analysts, were read and ordered placed on file.

Upon motion, adjournment was taken until eight A. M. the following day.

JUNE 23.

The Board reconvened at nine A. M. Professor Sayre read his annual report as drug analyst, which report was ordered placed on file.

Professor Marvin, the sanitary and civil engineer, then made his report, and presented the following resolution, which was unanimously adopted:

Resolved by the State Board of Health, That, in its judgment, to carry out the provisions of the water and sewage law (chapter 382, Laws of 1907), and to secure to the people of the state large benefits therefrom, there is great necessity, *first*, for amendments to that law which will give the Board sanitary supervision over the operation of all waterworks and sewerage systems of the state, and over the discharge of any trade wastes into the waters of the state; *second*, for funds with which to carry on scientific investigations as to the best methods applicable within the state for the treatment or purification of sewage, of trade wastes, and of water used for any public supply; *third*, for additional service needed to carry such supervision and investigation into effect.

And resolved further, That a committee, consisting of the secretary, the attorney and the sanitary engineer, be appointed to prepare bills along these lines for legislative action, to be reported back to the Board at its next meeting.

Professor Hoad then made his annual report covering the work done under the water and sewage law.

Mr. Welch, attorney for the Board, then made his report, which was ordered placed on file.

Doctor Lerrigo then made his report of his attendance upon the Annual Conference of State and Territorial Boards of Health with the Surgeon General of the Public Health and Marine Hospital Service, which is as follows:

Mr. President and Members of the Board:

This conference lasted but one day. The forenoon was chiefly occupied with the discussion of certain rules governing transportation of sick persons. As these rules were to be incorporated by the surgeon-general in the bulletin which he issues and supplies copies to state boards, it is not necessary to deal with it at length in this report. So far as persons with diseases of contagious character are concerned, it was decided that typhoid fever, tuberculosis and leprosy patients might be accepted for transportation under certain regulations; other diseases not at all. The carriage of typhoid patients provoked most discussion, and it was finally agreed that such should only be taken if accompanied by competent attendant.

The disposition of cases of contagious disease discovered on trains in transit was discussed especially with reference to smallpox. A motion finally prevailed to instruct that car with passenger should be cut out and returned to point of origin. Minority were for taking patient from train and quarantining at point discovered.

Lepers may be transported under proper regulations. A valuable reminder was that lepers or the insane, if aliens of less than three years' residence, may be deported.

The afternoon and evening were spent in discussing two bills prepared by Surgeon-general Wyman, and which have since passed the senate as bills 56101 and 56102. No. 56101 referred to an adjustment of various matters relative to the workings of the Public Health and Marine Hospital Service. No. 56102 contained two points of especial interest: One is the section providing for the establishment of a school of hygiene, for which the facilities of the hygienic laboratory shall be available; this school to be for state, county and municipal health officers. The other section is one providing for additional conferences between the surgeon-general and state boards of health, to be called at the discretion of the surgeon-general, not to exceed five in one year.

In conversing with other men there, I gained some general impressions that may be of some value to our Board. For one thing, most of them have a great deal more money allowed them. The state of Pennsylvania allows over a million dollars, but this is a great exception. Illinois has \$165,000, and this is entirely exclusive of food inspection, although \$35,000 of the amount goes for the antitoxin. This seems to be quite general among the other states—the furnishing of antitoxin free of charge to practically all who ask for it—and the ground of justification is that it is a sanitary measure and aids in preventing epidemics.

In reference to the new school of hygiene it seems that General Wyman has already allowed a number of health officers to pursue their studies in the hygienic laboratory, and now that the school is to be officially recognized, with regular instructors detailed, a systematic course arranged and a certificate granted, there are probably some of our Kansas health officers who will be glad to avail themselves of its advantages.

C. H. LERRIGO, M. D.

After a lengthy discussion of the advisability of adopting new standards for vinegar, the following rule was presented, and, upon motion, was unanimously adopted, this rule to take effect July 1, 1908:

By the standards promulgated by the secretary of the United States De-

partment of Agriculture and by Kansas State Board of Health, the term "vinegar" when used without qualification is held to mean cider vinegar, and the sale of any other kind under that name is misbranding.

Vinegars artificially colored or made from materials especially chosen to impart a color similar to that of cider vinegar are held to be imitations of cider vinegar unless each package, wholesale and retail, as delivered to the purchaser, is distinctly marked by a label which states the true nature of the article.

Upon motion, the following resolution as to guaranties by constructing engineers under the water and sewage law was unanimously adopted:

Resolved, That guaranties for attaining results from purification or treatment of sewage or water shall have only such weight toward approval of plans as may be allowed by the Board's engineer.

The following disinterments were then allowed: Sarah Ward Sheldon; cause of death, diphtheria; removal from Topeka Cemetery to Mount Hope Cemetery, Topeka. Frank Gano King; cause of death, scarlet fever; removal from Wa Keeney to Dighton.

The next order of business being the election of officers, the following were elected for the specified time named: Dr. A. B. Scott, Jetmore, president for the ensuing year; Dr. H. M. Bentley, Sterling, vice president for the ensuing year; and Dr. S. J. Crumbine, Topeka, secretary for the next four years. The entire advisory board was reelected.

An amendment to regulation 2 was then presented, which, upon motion, was unanimously adopted. The amendment is as follows:

REGULATION 2.

Collection of Samples.

Section 2.

Samples of original packages or broken packages of food, drugs or liquors shall be collected only by authorized inspectors of the department of health, or by any state or local health officer of Kansas, or by any official analyst.

The term "original package" as used herein is the original package, carton, case, can, box, barrel, bottle, vial or other receptacle put up by the manufacturer, to which the label is attached, or which may be suitable for attachment of a label, making one complete package of food or drug product. The original package contemplated includes both wholesale and retail packages.

Samples may be purchased in the open market, and if in bulk the marks, brands or tags upon the package, carton, container, wrapper or accompanying written or printed matter shall be noted. The collector shall also note the names of the vendor and agent through whom the sale was actually made, together with the date of purchase. The collector shall purchase representative samples.

A sample from bulk goods or from a broken package shall be divided into three parts, and each part shall be labeled with the identifying marks. All samples shall be securely sealed by the collector with the seal provided for the purpose. If the package be less than four pounds, or in volume less than two quarts, three packages shall be purchased, when practicable, and the marks and tags on each noted as above. When three samples are purchased, one shall be for examination by such chemist or examiner as may be designated by the secretary of the State Board of Health; a second shall be held under seal for such use as may be designated by the secretary of the State Board of Health; the third shall be held under seal, and, upon request, the secretary of the State Board of Health shall order it delivered to the party from whom it was purchased, or to the party guaranteeing such merchandise. When two samples are purchased, one shall be for examination

by the chemist or examiner, and the other shall be held under seal subject to the orders of the secretary of the State Board of Health, who may, upon request, order it delivered to the seller or guarantor of the goods. If but one sample is purchased, it shall be examined by such chemist or examiner as the secretary of the State Board of Health may designate.

(Published in the official state paper July 1.)

The Secretary then announced that the expense fund for the Board for the ensuing year was not sufficient to enable the Board to have their four quarterly meetings as provided by law, whereupon a motion was made and carried that the September meeting be omitted, and the first quarterly meeting be held at such time in November as is designated by the secretary.

The following bills were audited and allowed:

| | |
|-----------------------|--------|
| L. E. Sayre | \$5 53 |
| E. H. S. Bailey | 5 28 |
| C. E. Coburn | 12 68 |
| J. B. Carver | 26 25 |
| H. M. Bentley | 26 94 |
| C. S. Huffman | 28 60 |
| C. D. Welch | 33 50 |
| A. B. Scott | 38 33 |
| W. C. Hoad | 4 98 |
| J. T. Willard | 2 90 |
| F. O. Marvin ..... | ..... |

No further business appearing, upon motion the Board adjourned.

SECRETARY'S REPORT.

Mr. President and Members of the Board:

Owing to the lack of sufficient funds in the expense account of the Board the March meeting as required by law was omitted. This incident simply emphasizes the necessity of a larger appropriation in this fund, in order that not only the requirements of the law concerning the meetings shall be carried out, but that the Board may not be embarrassed in the performance of the work for which it is responsible under the law.

The work of the department since the last meeting of the Board held in November has been quite heavy, and the character of the work in many instances exceedingly important. New and difficult problems, both under the water and sewage law and the food and drugs law, have presented themselves for solution. Those of the most importance will be presented under their appropriate headings in this report.

It is quite impossible to present to the Board anything like a detailed account of the work of the department, and it will probably be sufficient to call your attention to such matters as are of paramount importance in the enforcement of the various laws with which this Board is charged, and to take a general survey of the sanitary conditions, with suggestions along the lines of prevention and restriction which have been made or are contemplated in the near future.

The general health of the state, so far as communicable diseases are concerned, has been in about the average normal condition for the past six months. The fatalities from tuberculosis seem to be about seven less for the past six months than for the same period last year, which seems to indicate the onward march and the continuous contribution of deaths to this devastating plague.

There have been reported 104 deaths from typhoid fever as against 97 deaths last year for the same time, with 467 cases reported for the past six months. It is presumed that the number of cases reported is far short of the actual number occurring, which leads me to again remark that the in-

creased prevalence and continued fatalities from typhoid fever are such as to be the occasion for alarm and apprehension for the future. Investigations under the water and sewage law have developed the fact that quite a number of the populous cities of this state are using a water supply that is entirely unsafe, as has been demonstrated time and again by bacteriological tests and sanitary analyses. It need occasion no surprise, therefore, when it has been determined that the greatest number of cases of typhoid fever and the largest number of fatalities occur in these cities.

It seems unfortunate that the water and sewage law does not give this Board authority to in some way compel municipalities or water companies to furnish a wholesome supply of water to their patrons. The law does give such authority in the case of the installation of new water supplies or the extension of those already in existence at the time of the passage of the law. It must be noted, however, that much of the typhoid fever occurring in the smaller towns and rural districts of the state is not due to the pollution of a common source of water supply. Investigations made by our sanitary engineer and your secretary last fall in a number of towns where typhoid fever was prevalent convinced them that the source of infection was that of the common house fly, occasioned by improper and poorly constructed closets and privy vaults in some instances, and in others the pollution of the ground water supply by cesspools.

The number of cases of diphtheria reported for the past six months was 716, with 96 deaths, as against 1182 cases with 143 deaths for the same period last year. This shows a gratifying reduction in both cases and fatalities.

The number of cases of scarlet fever for the past six months was 913, with 33 deaths, as against 614 cases with 42 deaths last year.

The number of cases of measles reported for the past six months was 1528, with 15 deaths, as against 4282 with 38 deaths for the same period last year, again showing a remarkable decrease in cases and deaths.

The number of cases of smallpox for the past six months is greatly in excess of that of the same period last year, there having been reported 2622 cases, with 4 deaths, as against 928 cases with 3 deaths for the same period last year. The continued mildness of most cases of smallpox, the failure in many instances to have an attending physician and thus escape quarantine, and the absence of a successful vaccination, together with errors in diagnosis, must be given as the reasons for the increasing number of smallpox cases.

Since the last meeting smallpox has existed in epidemic form at the following places: Stafford, Blue Mound, Liberal, Belleville, Seneca, Hollenberg, Leavenworth, Atchison, Wichita, Tonganoxie, Kingman, and Newton. Visits by the secretary were made to investigate the epidemics at the following towns: Belleville, Liberal, Kingman, and Newton. Doctor Carver visited Blue Mound on behalf of the Board, and succeeded in checking what might otherwise have been an extended epidemic. Doctor Scott visited Stafford on behalf of the Board, and was instrumental in establishing a legal quarantine in all cases reported.

In consideration of the fact that we have had smallpox continuously in this state since the Spanish-American war, ten years ago, probably no better and no worse condition than has obtained in every other state in the Union, there seems to be but one conclusion, and that is that quarantine measures have not been effective in preventing the continuance of the disease. On the other hand it seems to be well proven by over a hundred years' experience in this country, and in every other civilized country in the world, that successful vaccination and revaccination does prevent the disease; therefore, it would seem that the only reliable and certain means for the stamping out of smallpox is that of vaccination, which, in the judgment of your secretary, should be made compulsory. It is a matter of knowledge to any one who cares to investigate, that in Germany and Sweden, where they have compulsory vaccination, the disease of smallpox is practically unknown, excepting such few isolated cases as occur among emigrants and strangers in the country. In the event that the state refuses or neglects to provide for compulsory vaccination, I am of the opinion that quarantine

measures for smallpox might with propriety and with justice be discontinued after a reasonable length of time, in which public notice shall be given, in order that people may have the choice of acquired immunity by vaccination or take their chances in contracting the disease from exposure. It would also necessitate the changing of our quarantine law should this procedure be desirable.

The sanitary forces of the state seem to be well organized, and monthly reports are being received from health officers with but few exceptions. I have to report at this time the delinquency of several county health officers in submitting their annual reports for 1907, as required by law, and recommend that the Board take some decisive action in the matter. Following are the health officers who have not reported: Doctor Parrington, Emporia; Dr. J. D. Colt, Manhattan; Dr. C. J. Forney, Lyons; and Dr. W. B. Callender, Stockton.

As reported at the July meeting last year, there is to be held in the city of Washington, September 21 to October 12, the International Congress on Tuberculosis. This will at once be the most important and most remarkable meeting that has ever been held in the world's history. The foremost physicians, sanitarians, scientists, educator, statesmen, sociologists and philanthropists of this and other civilized countries of the world will assemble for the purpose of discussing ways and means for the prevention, restriction and cure of tuberculosis, including extensive exhibits of both hospital and sanitarium treatment, educational schemes and measures in prevention and restriction.

An urgent request has been made to the municipalities of the first and second classes of this state, together with the representatives of state charitable, educational and labor departments, also state medical societies and State Federation of Women's Clubs, to send delegates. Up to the present time there have been about fifteen accredited representatives appointed, and their names have been certified to the secretary-general of the congress, Dr. John S. Fulton. It might be of interest to the Board to mention that your secretary has been honored with the appointment as a member of the committee on awards and prizes. The duties of this committee are of such a nature as to require extensive detailed investigation of displays of paraphernalia and literature, which will result, I am sure, in giving him an extensive understanding of the ways and means for the prevention and restriction of this great scourge. It is recommended that the Board appoint a delegate and alternate to attend this congress.

Evidence is multiplying which confirms us in the belief that the final success of any plan having for its objects the prevention and restriction of tuberculosis must be conditioned upon the elimination of the tuberculous dairy cow. Mr. Schroeder, of the Bureau of Animal Industry, and Rosenau and Anderson, of the United States Public Health and Marine Hospital Service, have experimentally proven the transmissibility of the human bacilli to the lower animals, and Dr. Theobald Smith, who has hitherto been an ultraconservative along this line, has acknowledged as authentic at least fifty cases in which the bovine bacillus has been identified in various forms of tuberculosis occurring in children. Other independent investigators have seemed to prove beyond a doubt that the bovine type of bacillus of tuberculosis is indeed a factor in the scourge which has been dealing death and devastation to mankind these many years.

With this belief, we have through personal interviews, correspondence, and by meetings with a number of the city councils of the state, urged the passage of an ordinance for the control of the municipal milk supplies. The state dairy commissioner has drawn up a uniform milk ordinance which seems to meet the requirements. A letter of instruction was mailed to each inspector with a copy of this ordinance, urging that on every favorable occasion they might meet with the city council of the town in which they chanced to be, urging the passage of the ordinance. The sale of milk is conditioned upon the sanitary inspection of dairies and the certifying to the local board of health of the healthfulness of the cattle used for dairy purposes.

At a meeting of state veterinarians, held in Manhattan January 2, a

committee was appointed by that association to coöperate with the State Board of Health to secure legislation looking toward the elimination of the tubercular dairy cow. It is recommended, therefore, that this Board appoint a special committee to make diligent inquiry on this subject, and propose ways and means and a suitable bill, which will bring about this much desired result.

MEASURES OF PREVENTION AND RESTRICTION.

Inasmuch as the health laws charge this body with the general health of the people of this state, an effort has been made to comply with this requirement in the issuing of certain bulletins on diseases that are dangerous to the public health. In order that they might have the widest circulation and that the people in general might become familiar with the suggestions offered therein, it was a question as to how we might proceed. Inasmuch as education must after all be the final solution of reform movements, particularly in matters of prevention, it was thought best to secure the coöperation of the state superintendent of public instruction. Accordingly, arrangements were made whereby these pamphlets on prevention, including tuberculosis, scarlet fever, diphtheria, typhoid fever and smallpox, would be used as textbooks in the county normal institutes to be held throughout the state this year. Superintendent Fairchild ordered that the Board's pamphlets be used as textbooks in the classes of physiology, and thus large numbers of the pamphlets have been sent to the normal institutes, and we believe will result in much good and a better understanding of preventive measures as applied to our day schools.

The following letter was then sent to at least one paper in each county in the state:

"KANSAS STATE BOARD OF HEALTH,
CAPITOL BUILDING, TOPEKA, June 9, 1908.

"Mr. Editor:

"DEAR SIR—The health laws charge the State Board of Health with the general supervision of the health of the people of the state. This has been construed to mean that they should suggest ways and means for the prevention and suppression of communicable diseases. (Naturally the means of cure are left to the practicing physician.)

"Accordingly, there have been prepared pamphlets along the line of prevention and restriction of the diseases most dangerous to the life and health of the people, viz., tuberculosis, typhoid fever, diphtheria, scarlet fever and smallpox. Effort has been made to present the facts in a simple way, free from technical or scientific terms, in order that everyone may readily understand the subject matter treated therein.

"The question confronting the department is how the people may be advised that such pamphlets have been prepared, and how they may be placed in the hands of those who may be interested. It was thought we might have the support and assistance of the newspapers in this work, and have therefore mailed you copies under separate cover, with the request that you kindly announce in your next issue that we will be pleased to furnish copies of any or all of these pamphlets upon request, by sending in name and address.

"We have also prepared a booklet entitled "Kitchen Tests," in which is set forth some simple tests for the detection of some of the more common adulterations of foods, which will also be sent upon application.

"These pamphlets are being placed in each of the county normal institutes this year as a part of the course of instruction to teachers.

"Thanking you in advance for your kindly coöperation, I am,

Very truly yours, S. J. CRUMBINE, M. D.

Secretary and Chief Food and Drug Inspector."

In addition to this the following letter was sent to county and municipal health officers:

"KANSAS STATE BOARD OF HEALTH,
CAPITOL BUILDING, TOPEKA, June 10, 1908.

"To County and Municipal Health Officers:

"The state and local boards of health are charged with the general supervision of the health of the people of the state. This is construed to mean

that ways and means for the prevention and restriction of communicable diseases should be devised and put into effective operation in so far as possible. Accordingly, pamphlets on the prevention and restriction of the diseases most dangerous to the public health have been prepared, and are ready for distribution. These include the following diseases: Tuberculosis, typhoid fever, diphtheria, scarlet fever and smallpox. Sample copies are herewith enclosed. Kindly advise us of the number of each that you desire, and they will be promptly sent, charges prepaid.

"It is desired that copies of these pamphlets be furnished to those families where any of these diseases occur, or to those exposed to the same.

"We entertain the hope that local health officers may give us their hearty coöperation in this educational propaganda for the preservation of the public health. Sincerely yours, S. J. CRUMBINE, M. D., *Secretary.*"

The above plans have resulted in the distribution of thousands of copies of these pamphlets on prevention, in addition to the kitchen tests. It is confidently hoped that these measures may be the groundwork of a widely diffused knowledge of the ways and means of prevention and restriction of communicable diseases.

The annual conference of the State and Provincial Boards of Health with the Public Health and Marine Hospital Service was hurriedly convened by telegraph one month before the usual time for holding the meeting, and the notice was received but a few days before the time designated in the telegram for the meeting. It was, therefore, impossible for the secretary to confer with the members of the Board concerning the delegate to be sent. The matter was presented to the governor, who urged that a representative be sent to take part in the discussion of interstate quarantine measures. Accordingly, Doctor Lerrigo, of this city, consented to attend this meeting, and he will report the conference to the Board in person.

WATER AND SEWAGE.

The information required of municipalities and corporations under the water and sewage law is now on file in the vaults of this office. Your sanitary and civil engineer has rendered material assistance to the department in the final check and tabulation of this mass of information. In a general way, it may be said that the information on file has revealed the fact that the public water supply of a number of our cities is entirely unsafe and inadequate for domestic purposes. These supplies of course are the ones in which surface water is used without sufficient purification. Permission for the extension of old supplies or the installation of new supplies has been granted to the following cities since the last meeting of the Board: Wellington, Lyons, Beloit, Pittsburg, Lawrence, Garnett, Concordia, Frankfort, Winfield, Bonner Springs, Herington, and Ellsworth.

In addition to these there are a number of cities that are contemplating, and prospecting for, a new source of water supply. The department has been able, through the good offices of the chemical and engineering departments of the University, to be of real service to these municipalities in locating an efficient and wholesome water supply.

The following cities have been granted permission for the construction of new sewerage systems or the extension of old ones: Hutchinson, Newton, Wellington, Olathe, Coffeyville, Galena, Horton, Dodge City, Atchison, Frankfort, and Fredonia.

Permission to discharge untreated sewage into the natural waters of the state was granted by the commission composed of the governor, the attorney-general, and the secretary of the Board to the following cities, for a period of two years from date of permission: Frankfort, Lawrence, Dodge City, Hutchinson, Chapman high school, and the A. T. & S. F. Railway for private sewers at Syracuse and Galena.

There are in all likelihood a score of cities in the state that are now or soon will be large and prosperous enough to install waterworks and sewerage systems. This calls for a vast amount of work in the nature of a personal sanitary and engineering inspection by this department of these contemplated improvements, and emphasizes the necessity of a sanitary and civil engineer employed by the state, who may devote all his time and

attention to this work. Professors Marvin and Hoad, in their report to the Board, will enter somewhat into detail concerning the work of this department and its needs for the future. It is recommended that the Board, by resolution or otherwise, petition the legislature for the creation of the office of state sanitary and civil engineer upon a salary, with a sufficient fund to properly equip and maintain such a department.

On February 6, in answer to numerous repeated complaints, the secretary, in company with the sanitary and civil engineer of the Board, went to Atchison for the purpose of determining the sanitary conditions surrounding the source of water supply, and whether or not the supply was wholesome. I have requested Professor Hoad to give in detail the condition of the water supply of Atchison, in order that it might be made a matter of record. It will be sufficient for me to say that we were of the opinion, which was based upon our inspection and the findings of the bacteriologist in cultures of water taken on the grounds, that the supply of Atchison was not what would be considered a safe and wholesome supply. The following letter was therefore addressed to the mayor and council of the city of Atchison:

"TOPEKA, February 22, 1908.

"GENTLEMEN—I have to report to you the result of the bacteriological examination of the city water that was secured in your city by Professor Hoad and myself recently, which is as follows: Three samples taken at the intake—all positive; three samples taken at the inlet to the sedimentation basin—all positive; three samples taken at the outlet to the sedimentation basin—all positive; three samples taken at the outlet to the sedimentation basin—all negative; three samples taken from a tap (in the Byram Hotel) of the distributing system—two negative and one positive.

"These tests were made for the presence of the *Colon bacillus*, which is the bacteria found in the intestinal discharges of man and animals, and the presence of which is strong presumptive evidence of sewage pollution. While the method of sedimentation as practiced by the city waterworks seems to remove a considerable amount of the bacteria, yet the test as secured from the tap in the hotel indicates that one of the three samples still contains the *Colon bacillus*, and must therefore be considered an inefficient treatment, and subjects the water to a suspicion of its being unsafe. It would only need an epidemic of typhoid fever at St. Joseph to precipitate a similar one in Atchison, unless the water used for domestic purposes was boiled.

"I am sending this report for the citizens' information, that they may be advised of the conditions. A similar report has been sent to the manager of the water company.

Very truly yours,

S. J. CRUMBINE, M. D.,
Secretary."

On February 22, in company with Prof. E. H. S. Bailey, and in compliance with repeated urgent requests by attorneys representing citizens near Niotaze and Sedan, we visited Caney, Sedan and Niotaze, making a sanitary inspection of the streams tributary to Caney river, particularly those which receive the waste material from the Niotaze refinery. The result of this investigation is embodied in a letter which was sent to the president of the Niotaze refinery, which is as follows:

"TOPEKA, April 4, 1909.

"Superintendent Oil Refinery, Niotaze, Kan.:

"DEAR SIR—I am enclosing copy of Professor Bailey's report on samples of water secured while on our recent trip to your place, and upon samples that had been sent us previously. This report is self-explanatory.

"I trust you will be so good as to follow the suggestions made by the professor, at a very early date, in order that this waste acid may be neutralized before being discharged into the natural waters of the state.

"Kindly indicate to this department what action you expect to take in the matter. Very truly yours,

(Copy.)

S. J. CRUMBINE, M. D., Secretary."

"LAWRENCE, KAN., April 3, 1908.

"Dr. S. J. Crumbine, Chief Food and Drug Inspector, Topeka, Kan.:

"DEAR DOCTOR—This department received on February 17 nine samples

of water from the Caney river and its tributaries, with a request that they be analyzed to show the effect of the waste from the oil refinery at Niotaze, Kan. Those samples were accompanied by an affidavit as follows:

"STATE OF KANSAS, CHAUTAUQUA COUNTY.

"We hereby certify that we took the samples on the day and date on the bottles, and have kept them in our possession till this date.

(Signed) C. D. DEARING, *Township Clerk.*
W. D. RILEY.

"The source of each sample is carefully stated in section, township and range, but the locality can best be identified by numbers as follows:

"No. 1, from Lake creek, a short distance below the point where the refinery waste is discharged.

"No. 2, some distance below this point on Lake creek.

"No. 3, Lake creek, a short distance above the point where Birch creek discharges into it.

"No. 4, Birch creek, a short distance above the point where it flows into Lake creek.

"No. 5, some distance below the point where Birch creek flows into Lake creek.

"No. 6, on Birch creek, opposite residence of J. R. Dodson.

"No. 7, some distance below said residence.

"No. 8, three-eighths mile below said residence.

"No. 9, from Lake creek above the village of Niotaze, and above the refinery.

"Birch creek flows into Caney river about three-fourths of a mile above the point where the water is taken for the Caney water supply. With the exceptions of samples Nos. 1 and 9, which were in moving water, we learn that the others were taken from comparatively still water.

"The analyses of the waters give us the following results:

| (Parts per million.) | | | | |
|----------------------|---------|----------|-----------|----------------------------------------|
| No. | Solids. | Chlorin. | Sulfates. | Acidity estimated as sulfuric acid. |
| 1..... | 1310 | 524 | 474 | 255 |
| 2..... | 1352 | 580 | 481 | 250 |
| 3..... | 1313 | 480 | 668 | 410 |
| 4..... | 3455 | 1976 | 28 | Neutral. |
| 5..... | 1397 | 484 | 686 | 402 |
| 6..... | 2445 | 1284 | 362 | 137 |
| 7..... | 2000 | 972 | 370 | 142 |
| 8..... | 1948 | 968 | 286 | 83 |
| 9..... | 1363 | 732 | 28 | Neutral. |

"From an examination of these results we learn from No. 9 (Lake creek above the refinery) what would be the natural composition of the water, although it is stated that most of the water used at the refinery is pumped from the Caney river, which is distant perhaps one-half mile east. This sample No. 9 is neutral, and it contains only a small quantity of sulfates. After it receives the refinery waste the presence of the sulfuric acid is evident, as shown in No. 1, both by the high sulfates and by the acidity, the sulfates being about seventeen times as much as in the unpolluted water. A part of the acidity is neutralized by the water coming in contact with calcium carbonate contained in the water, or in suspension. The difference in different samples may be due to the more or less complete mixing of the waste with the water from the creek.

"Birch creek has about the same amount of sulfates as Lake creek above the refinery, but it contains more mineral matter. This fact, from further investigation, is evidently due to a larger quantity of salt in Birch creek than in Lake creek. This water is also neutral before the two streams come together.

"Nos. 6, 7 and 8 show a diminishing acidity as well as, in general, a diminishing quantity of sulfates. This is no doubt due to the neutralization of carbonate, as the sulfates do not diminish so materially. At the lowest point examined, where sample No. 8 was taken, the water is still acid.

"A sample of water taken February 24 by myself from the Caney City

waterworks showed 135 parts hydrocarbonate alkalinity and 84 parts of chlorin.

"A sample of water from Sedan waterworks which supply also came from the Caney river, was taken on the same day by myself, and showed 237 parts of hydrocarbonate alkalinity and 12.5 parts of chlorin.

"These two analyses would indicate that the alkalinity of the normal unpolluted water had been cut down by acid waste from 237 to 135, and that there was nearly three times as much salt, which might be due to brine coming in from the oil wells in the vicinity.

"On February 24, samples of the refinery waste were collected by myself. These were taken during a heavy rain, and the waste was mixed with more or less rain water.

"No. 1, taken at the bottom of the hill, showed 172 parts free sulfuric acid.

"No. 2, taken some distance above, showed 181 parts.

"No. 3, taken farther up the hill, showed 80 parts hydrocarbonate alkalinity. This was probably due to mixture with surface water at this point.

"No. 4, which was the sludge taken direct from the refinery, contained 6272 parts.

"No 5, taken from Lake creek at the same time, showed 25 parts hydrocarbonate alkalinity. It is evident that samples numbers 3 and 5 were not samples in which the sludge had been mixed very fully with the water.

"We find that Tremann-Gartner, in his book on 'Water,' states that experiments made upon trout with water containing 50 parts of sulfuric acid in a million, for one-half hour, show that the fish would revive again in flowing water, and some specimens of large trout, remaining for an hour in water containing 10 parts in a million of sulfuric acid, showed no symptoms of poisoning.

"From a publication of the United States Geological Survey, 'On the Effects of Some Industrial Wastes on Fishes,' by M. C. Marsh, of the Bureau of Fisheries, I find the statement: 'The reaction of water which will support fish life must be slightly alkaline. When the water becomes even slightly acid fish cannot live in it, and in experimenting with acid pollutions the alkalinity of the water used as a diluent of course affects the results.' These experiments were tried with Potomac water, which showed, by titration with decinormal sulfuric acid (methyl orange indicator), an alkalinity of from 46 to 52 parts per million of calcium carbonate equivalent.

"From the above examinations and quotations, my opinion is that the sludge from the refinery produces a decided change in the composition of the water of Birch creek, making it sufficiently acid so that fish would probably not survive in the water. This also probably affects the main stream at Caney, but not in sufficient quantity to make the water have an acid reaction, so that it is not demonstrated that the quantity is large enough, under present conditions, to kill the fish in the Caney river opposite the waterworks at Caney.

"As there is no doubt that a comparatively large quantity of sulfuric acid is actually carried into Lake creek, and thence into Birch creek, from the refinery waste, and as dilution with water does not sufficiently change the composition so as to allow the water to be still alkaline or neutral in reaction, it is probable that the only practical method for neutralizing the waste water would be to run it into a tank of sufficient capacity so that it could remain for some time in contact with cracked limestone, with the object of forming a neutral calcium sulfate. The quantity of this latter substance, when allowed to escape into the stream by emptying the tank, would probably not be sufficient to cause serious inconvenience.

Respectfully submitted.

E. H. S. BAILEY."

This leads me to remark that the provisions of the water and sewage law should be broadened to prevent pollution of streams by industrial wastes. Under the present definition it seems that sewage only includes excrementitious waste from man and animals.

On April 29, in response to a request from an attorney from Winfield, representing a large number of citizens of Geuda Springs, a visit was made to that village to determine the sanitary conditions surrounding the springs,

as to whether or not the presumed unsanitary conditions were instrumental in polluting the water of the springs. The result of this visit is briefly stated in a letter to the attorney representing the petitioners, which is herewith submitted:

"Mr. P. H. Guy, Winfield, Kan.:

"TOPEKA, May 15, 1908.

"DEAR SIR—I am just in receipt of a report from our bacteriologist upon the samples of water secured at Geuda Springs, while there recently, which seem to indicate that two of the four samples secured showed *Coli* pollution, and the two others were negative.

"I do not at all feel satisfied with these determinations, for the reason that I had ordered fresh cultures sent to me at this place and failed to secure them. I was compelled, therefore, to use some old tubes with unsterilized plugs, which throws the matter in doubt as to the true findings.

"The sanitary conditions surrounding the springs are of such a nature as to be difficult of correction, particularly in so far as drainage is concerned. It is quite out of the question, I presume, for the village to inaugurate a sewerage system, and it seems to be also impossible to prevent the flooding of the springs during the time of high water in the river. Dykes or retaining walls seem to be of no avail, as the soil is of such a sandy character that the water seeks its level through percolation of the soil, and thus the springs are flooded.

"I have warned the management of the springs (the proprietor being absent) that the water must not be bottled for pop or drinking purposes during the flooding of the springs. The only suggestions that might with reason be put into effect at once to protect the springs is that of the removal of the hotel closets from their present situation, or the installation of cement vaults which can be emptied at stated intervals. This would protect the springs from contamination from this source, which seems to be the closest point from which pollution might be suspected.

"Altogether, the problem seems to be a very difficult one for satisfactory adjustment, and inasmuch as I am not at all satisfied with the bacteriological findings, I am unwilling to say that the spring water is really polluted.

"I hope to be able to go down there again soon with fresh culture tubes to make another test. Very truly yours,

S. J. CRUMBINE, M. D., Secretary."

Complaint has been made to this office that the effluent from the septic tank which is presumed to purify the sewage from the city of McPherson has become a nuisance and a menace to the health of the people, and the matter was referred to Professor Hoad, who made a visit to that city and an inspection, which is embodied in the following letter:

"Dr. S. J. Crumbine, Topeka:

"LAWRENCE, May 13, 1908.

"DEAR DOCTOR—In accordance with your request I stopped at McPherson while on my way home from Stafford on Monday of last week to investigate the operation of the McPherson sewage-disposal plant, concerning which you had some correspondence. Upon my arrival in the city I looked up the mayor, Mr. L. C. Kriner, and the county health officer, Doctor Dean. We talked over the situation at the city hall, looked at maps and plans, and I took some few notes regarding the disposal plant. Then the mayor secured a carriage and we drove out to the site of the plant, accompanied by Doctor Dean and ex-mayor Krehbiel.

"The disposal plant is located about one mile from the business part of the town and one-half mile beyond the outskirts. It consists of a covered septic tank and dosing chambers, followed by a single small sand filter. The plant was constructed about a year ago by Messrs. Lewis & Kitchen, of Kansas City. The effluent from the filter is discharged into the dry bed of a small ravine.

"I found that the sand filter is entirely inadequate for the work it is called upon to do. It is only eighty by twenty feet in area, and probably does not average more than twelve inches in thickness. In one place, at least, the under drain was within four inches of the top of the sand bed. The sewage was standing in putrefying pools over perhaps one-half the area of

the bed, and certainly two-thirds the whole bed was entirely sludged up and useless so far as efficient purification is concerned. I dug a number of holes for the purpose of investigating the condition of the sand below the surface. In a word, the filter is entirely too thin, to begin with; and, following this, is required to take several times as much sewage per day as it has capacity for. Each discharge of the dosing chamber is sufficient to cover the entire area of the filter to a depth of perhaps six inches, and I was told that the dosing chamber discharges about once in two hours. If this is the case, the filter bed is receiving several times as much sewage as it should on each square yard of its area, even were the sand bed three feet thick and the filter well designed, which is not the case.

"The effluent from the septic tank is very turbid and has considerable odor. We saw one discharge, the bulk of which remained in and on the filter bed for perhaps ten or fifteen minutes, and then passed into the ravine at the outlet. The condition of this ravine is not what it should be, as the sewage stands in turbid, sour-smelling pools, the channel being obstructed at numerous points. I called the attention of the mayor to this condition, and recommended that he have a man spend a little time in removing the debris from the stream bed, and in draining the pools, and he promised to attend to it at once.

"I told the mayor and county health officer that something should be done as quickly as possible to remedy the conditions in the filter bed. I pointed out to them that with the coming of warm weather there would undoubtedly be a very serious nuisance caused by the large amount of decaying sludge held in and on the surface of the filter bed. The mayor assured me that he would take the matter up at once with a view to providing a more adequate filtration system. I recommended to him that he authorize his city engineer, Mr. Rowland, to take measurements of the flow of sewage and other data upon which a design for filter beds could be based.

"Some mention was made of the possible contamination of milk by reason of the pasturing of the field in which the disposal plant is located. Of course, the only way in which such contamination could be brought about would be through the cattle standing in the pools of sewage and splashing it over their bodies, by means of which typhoid germs might find their way into the milk pail. The conditions there are so favorable for this kind of infection that I warned Doctor Dean against it.

"Mayor Kriner assured me that the city would push the matter vigorously until some relief is secured, and I assured him of our coöperation in the matter. I think a letter from you would have a decidedly good effect upon them, as it would give the council a definite written statement of the matter. I am making no written report to the mayor of my investigations, as we talked the matter over pretty thoroughly during my visit there.

Sincerely yours, W. C. HOAD."

The constructing engineers had executed a guarantee to the city of McPherson that the tank would produce a certain degree of purification, and the controversy seems now to be between the city of McPherson and the constructing engineers. It is mentioned in this connection as indicating the difficulties which the department has in securing compliance to the Board's requirements along the line of sewage purification. Objections made by your sanitary and civil engineer to the plans and specifications submitted by the constructing engineers are often met with the argument that they are willing to guarantee their proper and efficient operation to the city. The question therefore arises, Is the Board willing to accept a written guarantee by constructing engineers as to efficient operation and purification, regardless of the fact that such specifications are not in accord with the most recent scientific plans and detail? In other words, may the Board be doing its whole duty or be free from censure if they assume that the burden for faulty construction may rest upon the constructing engineers when they file a guarantee covering these matters.

We trust that this matter may have your earnest thought and consideration.

Quite a number of other visits were made in company with the sanitary

and civil engineer in the inspection of proposed waterworks and sewerage systems.

Mr. H. N. Parker, representing the United States Geological Survey, who has been working in conjunction with the State Board of Health in a sanitary survey of the natural waters of the state, completed his labors in this field in January, and has now returned to Washington, where he is engaged in tabulating and writing the report, covering the extensive investigations made in the state the past two years. Much valuable data has been secured, and the people of Kansas may consider themselves indeed fortunate in having this great work done with so little expense to the state. Under the agreement of the Geological Survey, that department is to first publish the data thus secured, although we have been permitted to use much valuable information in advising municipalities and corporations concerning the sanitary and industrial usefulness of the waters of the state.

FOOD AND DRUGS LAW.

As indicated in our last report, a very large share of the work of the office has been devoted to the enforcement of the food and drugs law. Generally speaking, we believe that the provisions of the law are being as well observed as might reasonably be expected within so short a time of the passage of the law. Emphasis has been placed upon sanitary inspection. On the first day of January the sanitary score-card system was put into operation, in which all places or things where foods or drugs are stored, sold, offered for sale or manufactured were required to be scored as to their sanitary condition. We believe this has resulted in much good, and that the sanitary conditions have been greatly improved. Scores that are reported to the department under a certain percentage are sent a special notice, in addition to the notice received from the inspector, requiring an immediate change of the unsanitary conditions found. We believe this is the first instance in which this sanitary score card has been used in food and drug inspection.

The campaign instituted by the department last fall on the watered oyster has been, in a general way, we believe, quite successful. Most of the shipments into this state are now refrigerated by ice packed around instead of in with the oysters, and the consumer is now getting solid meats instead of large quantities of added water, much of which was often of a doubtful character. The express companies doing business in this state have all consented to refuse consignments of oysters to this state that do not meet with the Board's requirements, as shown by the following letter:

"WELLS, FARGO & COMPANY EXPRESS,
CENTRAL DEPARTMENT,
KANSAS CITY, MO., January 1, 1908.

"Kansas Food and Drugs Law.

"*To Agents:* Please be advised that the State Board of Health, at its quarterly meeting in November, 1907, adopted a standard for oysters sold or offered for sale in Kansas, which standards in effect exclude the addition of water either from melted ice or added in any other way, as in conflict with section 7 of the Kansas food and drugs law.

"Therefore, you must not dispose of oysters refused by consignee or consigned for disposition that have been refrigerated by ice being added to oysters, such as necessarily obtains in the method of tub shipments.

"The department of the State Board of Health will hold agents responsible for the sale of adulterated and substandard oysters, where the sale is made in Kansas, to the same extent as local dealers or jobbers will be held, if you dispose of consignments refused or otherwise.

"This in effect means that oysters can be sold only in their natural juices, and we will be governed accordingly in their transportation in the enforcement of the food and drugs law of Kansas.

R. A. WELLS, *General Manager.*"

On January 7 a meeting was held with the members of the State Board of Pharmacy and an agreement entered into by which the inspector for that Board was deputized as a drug inspector for this department, the

Board of Pharmacy deputizing our Mr. Tilford as an inspector under the pharmacy law. Thus each Board has the services of two drug inspectors with the expense of but one. We trust that this arrangement may meet with your approval.

Soon after the last meeting of the Board complaint was made that a wholesale grocery company of Denver was doing a freight-car business at various places throughout the state, and a request was made that an inspector be sent to Garden City, where a car was then being unloaded and the groceries distributed to people who had previously given orders for these goods. Accordingly, the secretary went to Garden City, and upon investigation found that many of the packages being distributed were short in weight from five to twenty-five per cent. These goods being interstate shipments it was thought that the case offered a fine opportunity for prosecution under the national food and drugs law. A telegram was therefore sent to Doctor Wiley, requesting the presence of a federal inspector. After waiting in the city three days the federal inspector appeared and the evidence secured was turned over to him. After waiting several months, the department at Washington finally made reply to my repeated inquiries that, the evidence not having been secured by an official inspector of the government, they could not prosecute the case. This incident, together with a number of others that have since come up, leads me to remark that the expected coöperation and assistance from the federal authorities in the enforcement of the state and national laws as applied to products received within this state have not thus far materialized.

Perhaps the most important matter under the food and drugs law that has transpired since the last meeting has been that of our campaign against the false and misleading statements as contained upon patent medicines. Manufacturers had as a rule only complied with that provision of the law which requires the alcoholic content and the prescribed narcotic drugs to be stated on the label. Few had made any corrections in their false and misleading statements. Neither the federal authorities, nor any state, so far as I was able to learn, had taken any steps in this matter, and as the department had been diligently instructing retailers to correct and legalize the goods in hand, and to see to it that future stocks should meet with the requirements of the law, this object was being continually defeated by the receipt of new goods that bore false and misleading statements. It was therefore determined to bring the matter to a focus, which was done in the following way: Mr. Tilford was instructed to go to the wholesale drug house of the Arnold Drug Company, of this city, pointing out to the proprietor each patent medicine that was manifestly misbranded in this particular, and warning him that the sale of such misbranded goods would subject him to the penalties of the law. At the same time letters were sent to the wholesale drug houses of Kansas City with the warning that the continued shipment of misbranded goods into this state would be resisted and information submitted to the federal authorities. As contemplated, this had the desired effect, and soon large numbers of inquiries were received from manufacturers concerning their products which were on sale in this state and to which we found objection. The uniform excuse was given that inasmuch as no other state or the federal government had made any objection to certain statements upon their labels they could not understand why the state of Kansas should interfere. Finally the secretary was surprised by the appearance at the office of the general counsel and the president of the Proprietary Association of America, at which time the entire matter was thrashed out, and I am pleased to say satisfactory adjustment secured of the matters complained of, with but one exception. This was to the effect that the department would withdraw any further objection to the reasonable and truthful use of the word "cure," or where it occurred as a part of a name, until such time as the courts had made a definite decision upon that matter in cases that should be brought by the federal government. It was agreed that the objections to labels upon medicines whose manufacturers belonged to the Proprietary Association should be taken up through the general counsel, Mr. Douglass, and upon the correction of the cartons and labels the stock in the hands of jobbers in this state and St.

Joseph and Kansas City should be exchanged or redressed, and that the retail dealers in this state be supplied with new cartons upon application. This arrangement has been continued with gratifying results. Following is the circular letter issued by Mr. Douglass:

"CHICAGO, January 24, 1908.

"GENTLEMEN—Mr. Cheney and I have just returned from a hurried trip to Topeka, Kan., where we had an interview with Dr. S. J. Crumbine, secretary of the State Board of Health. We believe Doctor Crumbine to be a fair and reasonable public official, who does not desire to make any needless trouble for the drug trade. He says, however, that there is a great deal of old stock of proprietary medicines still being sold to the retailers by the jobbing houses in Missouri and Kansas, which has never been relabeled, and much of which does not conform to the provisions of the state law. He insists that manufacturers should either recall this old stock from the jobbers or have it relabeled at once in conformity with the state law, so that no more of it will pass into the hands of the retailers in its present condition. Mr. Cheney and I think this is a very reasonable proposition, and I assured the commissioner that I would notify our people of his desire in this matter and urge that it be complied with at once. Please give this your immediate attention.

"Doctor Crumbine called attention to several articles which he believed to be 'misbranded' by reason of 'misleading' statements upon the label. As to those cases in which such statements are clearly misleading he insists that correction should be made at once.

"There are other cases (involving for instance the use of the word 'cure') about which I think Doctor Crumbine feels that there may be reasonable ground for difference of opinion; and as to this class of cases I think it probable that he will defer action until the test cases commenced by the federal government in the District of Columbia have been passed upon by the courts. This would apply only to doubtful cases. But where there is a manifest misuse of the word the change should be made at once.

"We left with the understanding that Doctor Crumbine would notify me of any case involving the charge of misbranding of an article manufactured by any member of the Proprietary Association, and I agreed, upon receiving such information from him, to correspond at once with such member in regard to the matter. This arrangement was made with a view of saving delay and trouble for all parties.

"It should be noted that the Kansas law in regard to the misbranding of drugs is substantially the same as the national law. Yours very truly,
GEORGE L. DOUGLASS."

A similar arrangement has been made with Mr. Holliday, secretary of the National Wholesale Druggists' Association, with whom we are reaching those manufacturers who are not members of the Proprietary Association. I am glad to report that the principal patent medicine manufacturers, representing probably three-fourths of the patent medicine trade of the country, have thus been reached and a satisfactory adjustment made of their cartons and labels. It can be truthfully claimed that it has been left to the progressive state of Kansas to first successfully contend with the great Proprietary Association of America.

The management of the Midwinter Exposition requested the department to make a pure food display at their exposition last winter. The matter was submitted to the auditor, and by his permission an exhibit was gotten up and displayed throughout the ten days of the exposition. We believe the display to have been a creditable one and that it was instrumental in educating the public, particularly in familiarizing them with the difference in physical appearance between a pure product and one that is adulterated. Professors Jackson and Zeiffe, of the University, and Mr. Kleinhaus, food inspector, were in attendance at the booth. The samples thus collected will form the nucleus for a permanent display in the office of the department.

During January meetings were held with the State Bottler's Association, and the state ice-cream manufacturers, and a satisfactory understanding as to the provisions of the law was secured.

Repeated examinations by the drug laboratory revealed the fact that alcohol being sold and used by pharmacists in this state did not comply with the standards laid down in the United States Pharmacopœia. The commercial alcohol throughout the West seems to be that of 188° proof, and the standards require that of 190°. The matter was therefore taken up with the wholesale jobbing houses and manufacturers, and after considerable correspondence and discussion pro and con, the provisions of the law and the requirements of the Board were complied with. It is now the distinct understanding that an order of alcohol from any jobbing house means the official 190° proof alcohol. The following circular letter on the subject is explanatory of the situation:

"AN OPEN LETTER TO PHARMACISTS AND DEALERS IN ALCOHOL.

"The undersigned has become aware of the fact that there is at present transported into the state of Kansas a considerable quantity of alcohol that is below the official standard. Many of the preparations made by the use of this alcohol and by different dilutions of the same are substandard as to the result, and it therefore becomes necessary to notify the retail druggists and all others concerned that this article must be regarded as illegal, inasmuch as it does not conform to the requirements of the United States Pharmacopœia.

"The article which is now shipped into Kansas as alcohol is known as 188° proof. The United States Internal Revenue Regulations and Instructions concerning distilled spirits defines proof spirits as follows:

"Section 3249, Revised Statutes, provides that proof spirit shall be held to be that alcoholic liquor which contains one-half its volume of alcohol of a specific gravity of seven thousand, nine hundred and thirty-nine ten-thousandths (0.7939) at 60 degrees Fahrenheit." (Alcohol of the latter specific gravity is practically absolute alcohol.)

"It will therefore be seen that 188° proof alcohol is a 94 per cent alcohol by volume, whereas the official alcohol is 94.9 per cent. I would strongly urge that dealers send into the state a 190° proof alcohol. This would correspond to practically 94.9 per cent. Alcohol, being hygroscopic in character, may probably be reduced by natural causes to 94.9 per cent by the time it reaches the retailer.

"It may be argued that a large part of the alcohol that is sold by the druggists need not be stronger than 188° proof (94 per cent), and therefore it is a needless requirement that all the alcohol should be of higher percentage. In reply to this suggestion, I would state that it is a very simple matter to produce an alcohol of a lower percentage from one of the higher percentage by following the directions of the United States Pharmacopœia, which are as follows:

"Mix V volumes of the stronger alcohol with distilled water to make V volumes of product. Allow the mixture to stand until full contraction has taken place, and until it has cooled, then make up the deficiency in the V volumes by adding more distilled water.

"Example.—An alcohol of 30 per cent by volume is to be made from an alcohol of 94.9 per cent by volume: Take 30 volumes of the 94.9 per cent alcohol, and add enough distilled water to produce 94.9 volume."

"The directions for dilution by weight, found on page 35 of the United States Pharmacopœia, are quite as simple as the above.

"A reasonable time is suggested by this department for correcting this misunderstanding on the part of the druggists and dealers concerning this common solvent and extractive fluid so necessary to the making of standard preparations, and it is to be hoped in the near future that none of the substandard alcohols will be found in the hands of the retailer as medicinal alcohol, or sold as such.

(Signed)

L. E. SAYRE,

"Director of Drug Analysis, State Board of Health."

Approved:

"S. J. CRUMBINE, M. D.,

"Chief Food and Drug Inspector."

The special session of the legislature passed but one bill that is of interest to this department, known as house bill No. 51. Copies of this bill were

sent to all the packing houses in this state, accompanied by the following circular letter :

"To Packers and Butchers of Kansas: "TOPEKA, February 13, 1908.

"House bill No. 51 is herewith enclosed for your information. There has recently been found on the markets of this state meat products which have had added color. We desire to inform you that the Kansas food and drugs law prohibits the use of artificial color of any kind in meat products. This rule will be enforced on all products offered for sale to the retail trade in this state. Very truly yours, S. J. CRUMBINE, M. D."

On February 26 the following spring house-cleaning letter was sent to jobbers:

"To the Wholesale Jobbers Selling Food and Drugs in Kansas:

"GENTLEMEN—The daily reports of our inspectors continue to recite the fact that a considerable quantity of goods purchased previous to the passage of the Kansas food and drugs law is upon the shelves of the retail dealer, much of which is improperly labeled, and therefore illegal under the provisions of the law.

"The law became effective and in force February 14, 1907, but the State Board of Health provided in the regulations that dealers would have until October 1, 1907, to dispose of illegal goods or to have them properly relabeled to meet the requirements of the law. Notwithstanding that there has been much effective work done and a great many goods disposed of, there still remains in the hands of many of the retail dealers a considerable quantity of products that do not meet our present requirements. The department clearly understands that it is not the fault of the jobbing interests, but is due, in a large measure at least, to the negligence or unbusinesslike methods of some of the retail dealers.

"In order that a quick and effective clean-up of the entire state may be made, and that jobbers may not be disturbed by complaints of retail dealers indicating that the department inspectors have called in question many of their goods, and in order also that this work of a final clean-up of the state may be accomplished in a coöperative way for a common purpose and for the common good, it is suggested that a letter of instruction be issued to each of your traveling salesmen, requesting that he inspect the stocks of each of your customers in order that a tabulation or census may be had of all old goods that are improperly labeled which bear your name or brand, or which have been purchased from you, such list to be used as a basis for information as to what supplemental labels or stickers may be furnished to dealers to make these goods legal or to have them exchanged, if that seems to be necessary.

"We trust that this may receive your cordial support and be put into immediate operation. Thus we may have several hundred 'inspectors' engaged in a final spring house-cleaning of the stocks in this state, and many of the troubles that have hitherto worried both you and this department will have come to an end.

"If you think it would be of value to your house or your salesmen, we would be pleased to have you send us the names and addresses of each of your traveling salesmen and department managers, and we will take pleasure in placing their names on the regular mailing list for the *Bulletin*, in which much information of value and importance in their line of work may come to their notice in an official way. Trusting to hear from you with a favorable opinion concerning this matter, I am

Sincerely yours,

S. J. CRUMBINE, M. D."

This was intended as a final check-up in order that the state might be cleared of such old stock as might be found in the hands of the trade that had not been already moved through the channels of commerce or had failed to be relabeled in accordance with regulations. We believe this has been the means of accomplishing much good in these particulars.

The reports submitted by our inspectors as to short weights in flour were of such a nature as to require special attention and consideration. Accordingly, on April 6 the following circular letter was issued to the millers of the state:

"KANSAS STATE BOARD OF HEALTH,
DEPARTMENT OF FOOD AND DRUGS,
TOPEKA, KAN., April 6, 1908.

"To the Millers of Kansas:

"This department has been making an extensive investigation of the weights of sacks of flour of various sizes and kinds that have been found in the hands of the retail trade and of the mills where packed. Some of these sacks had been packed for several months, others a shorter time, and others the day they were weighed by our inspectors. Almost all the flour packed more than two weeks was found short in weight from eight ounces to three pounds on one-quarter barrel sacks, and the majority of that packed the day of weighing was found short in weight, both net and gross.

"The Kansas food and drugs law requires that where a statement of weight is made it must be true net weight, and it matters not whether that statement is made on the sack by branding or on the bill of invoice of sale. If a quarter-barrel of flour is sold or sacked and offered for sale as such, each such sack must contain 49 pounds of flour, exclusive of the weight of the sack. If a 48-pound sack of flour or meal is branded or sold as such, it must contain 48 pounds of flour net.

"This department permits a slight variation in weights, provided that this variation is as often above as below the weight required in the packages of freshly packed flour. It is also proper to allow for a reasonable loss of weight due to evaporation of moisture, and waste by leakage in shipping. The loss which may be considered 'a reasonable amount' will be determined by a special investigation, and by consideration of the experience of millers and others in the past.

"The claim of some millers that a large variation below the stated weight should be allowed because of the evaporation of moisture which they themselves added during the process of grinding *will be contested*.

"We trust that we may have your earnest coöperation in the enforcement of the law, which, while protecting the consumer, will also secure you freedom from unfair and illegal competition.

Very truly yours,

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

Previous to the inspection on short weights it seemed to be an unusual thing to find flour that was up to the stated weight for which it was sold or branded. I am glad to report that our inspectors now say that the weights on flour and meal are as a rule what they should be, and that the purchasing public are now getting their just dues.

On March 24, in company with Professor Sayre and Mr. Tilford, we went to Parsons, in response to repeated complaints from that town, to investigate the condition of the numerous so-called joint drug stores. This investigation developed a deplorable condition of affairs. The committee was unanimous in the opinion that the proprietors of at least eleven of these places were in open violation not only of the Kansas food and drugs law but the prohibitory law as well, and thus the decency and morals of the state outraged as well as the aforesaid laws, and the inspectors and this department set at naught. Upon the request of the mayor at Parsons the committee submitted the following report for his information:

"PARSONS, KAN., March 26, 1908.

"To L. C. Moses, Mayor of Parsons, Kan.:

"As executive officer and secretary of the State Board of Health of Kansas, and as chief inspector of the Kansas food and drugs law, I have just completed the inspection of certain drug stores of your city.

"This inspection has been made necessary by reason of the reports coming to my office in Topeka, through our inspection department, of certain illegal conditions which seemed to demand our personal inspection. Therefore, accompanied by Prof. L. E. Sayre, drug analyst for the Board, and Mr. J. F. Tilford, state drug inspector, we have just completed the inspection, and desire to inform you of certain conditions found.

"Inasmuch as intoxicating liquors cannot be legally sold in this state as beverages or foods, but must be sold as medicines for some specifically named disease, they are therefore classified as drugs, and are also held to

drug standards, and as such come under the inspection work of the State Board of Health.

"By Kansas statute, the pharmacist who in any way abuses his trust in handling intoxicating liquors incurs a penalty of having his name stricken from the register of pharmacists. Furthermore, a very important provision of the law also requires that an individual who shall assume a responsibility of handling intoxicating liquors as a pharmacist shall have at least \$1000 represented in drug stock, which we take to mean drug stock of recognized standard quality, exclusive of liquors.

"This legal status of the pharmacist in a great measure has been a criterion in estimating the standing of those about whom reports have come to my office.

"The investigation, therefore, of the above committee includes an effort to ascertain—

"1. Is the pharmacist making a proper effort, as a custodian of spirituous liquor as a drug and remedial agent to secure its purity and proper distribution as a drug?

"2. Does the pharmacist who assumes the responsibility have the required amount of drug stock (\$1000) exclusive of liquor?

"After two days' careful investigation we desire to report to you that the following-named firms or stores are violating the Kansas food and drugs law, and as violators they are not only damaging the profession they represent, the community of which they are a member, but are a serious detriment to the moral welfare of the society of your commonwealth. By violators we mean that the pharmacists named are not making proper efforts as indicated in paragraph 1 above, and do not have the required amount of stock as indicated in paragraph 2: Wm. Quarles & Co., J. A. Butler, Rex Shannon, Freeman Bros., Makin Eye Drug Co. (as Doctor Bullet, R. C. Wright and C. A. Morris), J. M. Reynolds & Co., Opera Drug Co., The Fox Drug Co., William Sullivan, C. H. Hursh & Co., O. E. Kerby (Palace Drug Store), Queen City Drug Co. (J. F. Elliott), Randle Drug Co.

(Signed)

S. J. CRUMBINE, *Secretary.*

L. E. SAYRE, *Director Drug Analysis.*

J. F. TILFORD, *State Drug Inspector.*

"This is to certify that the above is an exact copy of the original report made to the Hon. L. C. Moses, mayor of Parsons, Kansas, on March 26, 1908.

S. J. CRUMBINE, *Member of Committee.*"

A large number of samples were secured from these stores, and the report of the analysis, together with what we saw and heard in these places, have been submitted to the attorney-general for such action as he may deem proper. Thus far that department has given no indication of what they expect to do, except in a general way, that when they have time prosecutions will be brought under the Kansas food and drugs law.

On March 28, upon request of the food and dairy commissioner of Missouri, your secretary, in company with Professor Bailey, attended a meeting of food officials and analysts of Missouri at Kansas City, Mo., to consult concerning the legality of certain vinegars that were being placed upon the market in the central West. The state of the vinegar market has been such as to seem to necessitate the revision of standards for glucose and sugar vinegar. Accordingly, a meeting was called of the analysts of the Board, together with the three vinegar manufacturers of this state, Mr. Hirsch, commercial analyst of Kansas City, and Mr. Morey, federal chemist of the federal laboratory of Kansas City, for the purpose of discussing the advisability of changing these standards, and to submit their views as to what standards should be adopted in lieu of the present ones. The meeting resulted in the unanimous adoption of the following standards, which are respectfully submitted to the Board with the recommendation that they be adopted:

"GLUCOSE VINEGAR.

"Glucose vinegar is the product made by the alcoholic and subsequent acetous fermentations of solutions of starch sugar or glucose (of such purity as not to impart color to the finished product), is free from added color, is

dextrorotatory, and contains, in 100 cubic centimeters (20° C.), not less than 4 grains of acetic acid.

“SUGAR VINEGAR.

“Sugar vinegar is the product made by the alcoholic and subsequent acetous fermentations of solutions of purified cane or beet sugar (of such purity as not to impart color to the finished product), is free from added color, is dextrorotatory, and contains, in 100 cubic centimeters (20° C.), not less than 4 grains of acetic acid.”

These standards will in effect eliminate the color which seems to be added after or before the process of manufacture, for the purpose of imitating cider vinegar.

On February 12 the following letter was received from the statistician of the Board, Mr. W. J. V. Deacon, which should receive the Board's careful consideration:

“TOPEKA, KAN., February 12, 1908.

“*Kansas State Board of Health, S. J. Crumblin, M. D., Secretary, Topeka:*

“GENTLEMEN—My attention has been directed to the fact that one of the teachers in the schools of this city recently died from what is reported to be a case of tuberculosis.

“Believing as I do the extreme danger of communicating this insidious disease by association, it appears to me that we owe it as a duty to the children of the state of Kansas that they are not thrown in contact with the disease through the medium of our public educational institutions.

“I have not had the opportunity to investigate the case above referred to, and do not know beyond common report that this was a positive case of tuberculosis; but even though this may not be true, it suggests the possibility of such a case, and I believe we owe it to the children of our state to safeguard their interests in this regard. All of which is respectfully submitted for your consideration.

Yours very respectfully,

W. J. V. DEACON, *Statistician.*”

Matters of this kind have come before your secretary a number of times, and the opinion was given that teachers suffering from tuberculosis should not be permitted to teach in the public or private schools. It is suggested that a definite rule be established covering this important point.

On February 17 the following letter was received from the Corn Products Refining Company, which is submitted for your consideration, and with the request that the secretary be instructed as to the nature of his reply:

“CHICAGO, February 17, 1908.

“*Dr. S. J. Crumblin, Chief Food and Drug Inspector, Topeka, Kan.:*

“DEAR SIR—We have received advice to-day that the following opinion has been rendered by Secretaries Wilson, Cortelyou and Strauss, and concurred therein by the President, to wit:

“‘We have each given careful consideration to the labeling under the pure-food law of the thick, viscous syrup obtained by the incomplete hydrolysis of the starch of corn and composed essentially of dextrose, maltose and dextrine. In our opinion it is lawful to label this syrup as ‘Corn Syrup,’ and if to the corn syrup there is added a small percentage of refiners' syrup, a product of the cane, the mixture, in our judgment, is not misbranded if labeled ‘Corn Syrup with Cane Flavor.’”

“In keeping with this decision our syrups, when labeled ‘Corn Syrup with Cane Flavor,’ may be sent into interstate commerce without violation of the food and drugs act, June 30, 1906.

“We will thank you for an expression on your part as to whether you will recognize the above decision in your state and consider our goods legal when labeled in conformity therewith.

Yours very truly,

CORN PRODUCTS REFINING COMPANY.”

Inasmuch as the majority of the Board of food and drug inspection of the federal government have decided that glucose may be properly called corn syrup, the minority (Doctor Wiley) dissenting, it would seem as if the policy of following the rulings of the federal department should be continued, and that any objection by this state to the use of the words “corn syrup” should be withheld.

In addition to the manifold duties of your secretary, he has been called upon to give addresses before county medical societies, women's clubs, county normals and state associations, and has been requested to write articles for various journals, magazines and farm papers, which things he has done to the best of his ability, and they are only mentioned in this connection in order that an opportunity might be presented to advise members of the Board that hereafter these honors will be gladly divided with such members as may be nearest to the point from which these invitations come.

Respectfully submitted.

S. J. CRUMBINE, M. D.,

Secretary.

REPORT OF BACTERIOLOGIST.

To the Kansas State Board of Health:

Since July 1, 1907, 1183 specimens have been examined in this laboratory.

Specimens of sputum examined, 764, of which number 216 were positive.

Specimens of suspected diphtheria examined, 285, of which number 112 were positive.

Samples of water tested for the bacillus *Coli communis*, 61, of which number 24 were positive.

Specimens of blood tested for the Widal reaction, 52, of which number 24 were positive.

Specimens of suspected gonorrhœa, 21, of which number 8 were positive.

One rabbit was given an emulsion of spinal cord from a case of suspect rabies. The result was negative.

Two rabbits were given hypodermic injections of milk. Two injections of 15 cubic centimeters each were given to each rabbit. There was an interval of one month between the injections. One rabbit was given milk from the Topeka Pure Milk Company and the other from the Dudley Farm Dairy. These rabbits were kept ten weeks. The animals seemed healthy and did not lose weight. The ophthalmo tuberculin test was made. A one per cent tuberculin "old" solution was injected into the eye of each rabbit but no reaction followed.

The \$500 which was appropriated for the equipment of the laboratory has been expended as follows:

| | |
|-------------------------------------------------------------------|----------|
| One Bausch and Lomb Grand model D. D. Continental microscope..... | \$150 00 |
| One electric centrifuge..... | 25 00 |
| Automatic microtome..... | 80 00 |
| Electrically heated incubator..... | 125 00 |
| Paraffin bath and thermostat..... | 10 00 |
| Thoma-Zeiss hemoglobinometer..... | 10 50 |
| Laboratory scales..... | 6 00 |
| Plate glass table top..... | 6 00 |
| Two tables..... | 10 00 |
| Small desk..... | 14 00 |
| Smith Premier No. 2 typewriter, (second-hand) ... | 27 00 |
| Books..... | 34 00 |

The books purchased are as follows: American Text Book of Pathology; Pathologic Technique, by Mallory and Wright; Sahli's Diagnostic Methods; DaCosta's Hæmatology; Bacteriology and Public Health, by Newman; Medical Laboratory Methods, by French; Mosquito Life, by Mitchell; A Manual of Bacteriology, by Muir and Richie.

This much needed equipment has made the work much more satisfactory to me, and I trust also to the patrons. The work is now well established, and we hope that the not far distant future will bring a still greater expansion.

Respectfully submitted.

SARA E. GREENFIELD, *Bacteriologist.*

REPORT OF SANITARY ENGINEER.

To the State Board of Health :

GENTLEMEN—The law commonly known as the water and sewage law, which became effective in March, 1907, lays upon the State Board of Health certain duties and powers relating, first, to the protection of the public health through a certain degree of control over the quality of public water supplies, and, second, to the preservation of the waters of the state from undue and unreasonable contamination by sewage. Although the law has been in force only a little over a year, its operation during this short period has been productive of results of such wide extent and general importance as to establish it as one of the really significant laws on the statute books. It will be attempted in the present report to state briefly the principal provisions of the law with respect to the two main subjects with which it deals, namely, water supply and sewerage; to summarize the work of the State Board of Health during the year in the discharge of the duties imposed and the exercise of the powers conferred by the law; to present for your consideration certain modifications or changes which seem desirable to be made in the scope of the law; and to outline some of the things which it is hoped may be accomplished during the coming year.

With respect to waterworks already in operation, the law provides merely the filing of reports, as follows:

“Every municipal corporation, private corporation, company and individual supplying or authorized to supply water to the public within the state, shall, within sixty days after the passage of this act, file with the State Board of Health a certified copy of the plans and surveys of the waterworks, with a description of the source from which the supply of water is derived.”

A penalty of \$500 and of \$50 per day is specified for failure to comply with this provision.

There is no authority given to the State Board of Health to examine into the operation of such plants, or to make any requirements or suggestions concerning the quality of the water supplied by them.

With respect to new supplies, and to extensions to or modifications of old supplies, a very salutary degree of authority is given to the State Board of Health. The following is quoted:

“No municipal corporation, private corporation, company or individual shall construct waterworks for the supply of water to the public within the state, or extend same, without a written permit, to be obtained from the State Board of Health, if in its judgment the proposed source of supply appears to be not prejudicial to the public health; provided, this shall not apply to the extension of water mains for the distribution of water. The application for such permit must be accompanied by a certified copy of the plans and surveys for such waterworks or extensions thereof, with a description of the source from which it is proposed to derive its supply; and no additional source of supply shall subsequently be used for any such waterworks without a similar permit from the State Board of Health.”

The penalty for failure to comply with the requirements just recited is fixed at \$500 and \$50 per day.

Following the passage of the law blanks were prepared for the recording of the information required, and copies of these were sent out by the secretary to all municipal and private waterworks plants in the state. Many of the reports as at first presented were indefinite, incomplete or otherwise inadequate, and required considerable amendment; but eventually a tolerably complete set of records, from practically all the waterworks in the state, has been collected and filed, and is now available for reference. A careful study of these records was made during last December, and a statistical summary, showing, first, the various sources of supply throughout the state; second, the manner of purifying supplies taken from surface sources; third, the ownership of waterworks, whether municipal or private, in cities of different size; fourth, the average daily per capita water consumption in cities of different size; and, fifth, the extent to which meters

are used, was published in the *Bulletin* of last January. In a general way, this summary shows that practically every city of a population of 1000 or more has a public waterworks system; that about three-fourths the entire number of these waterworks, serving something over half the total population, are owned and operated by the municipalities themselves, while the remaining one-fourth, serving a little less than half the total population, are owned by private corporations; and that on the average, and with notable exceptions, the smaller cities are supplied with water of better sanitary quality than that furnished to the larger cities.

The secretary has already presented a list of cities and towns for which the State Board of Health has approved the plans for new waterworks systems or for extensions to old systems. Almost without exception, a visit to the city in question and a careful personal examination of the proposed source of supply and of its environment, together with confirmatory tests or analyses of the water, where these seemed advisable, have been made as a preliminary to approval or disapproval by the Board.

About two-fifths the total number of waterworks plants in the state, representing about half the population supplied with water, derive their supplies from streams or ponds. But the streams of Kansas are poorly fitted to serve as sources of water supply. Their drainage areas, instead of being heavily timbered, and thus tending to equalize the flow through the different seasons of the year, and especially to conserve the rainfall during wet seasons and allow it to increase the flow during dry periods, are largely open plains, the wooded areas being comparatively small. This condition results in a flashy character of stream flow, with rather high flood flow and very low discharge during dry weather. For example, the ordinary minimum flow of the average Kansas stream is only from one-fifth to one-tenth as much as streams of the same size in Massachusetts and New York. Again, the soil of Kansas is, in general, a clay loam, and the drainage areas of the streams are largely devoted to agriculture; so that instead of the clear water of the streams of New York, or New Jersey, or Arkansas, or the mountain states, our streams carry water that is usually turbid, and that is frequently very unsightly and unattractive. Also, on account of the already high population per square mile on their drainage areas, the waters of many of our streams are polluted with sewage to such a degree as to be decidedly dangerous for use as public water supplies without thorough purification.

On the other hand, Kansas is peculiarly favored in the matter of underground waters. Throughout a large area in the southwestern part of the state the subsoil to a depth of twenty, forty or sixty feet is largely sand, and through the open pore-spaces of this body of sand there flows continually a magnificent stream of ground water, 350 miles long and 20 to 50 miles wide—the underflow of the Arkansas river valley. This underflow, which, taken as a whole, constitutes a veritable underground sea, is easily accessible from the surface and already furnishes to many of the best cities of the state an abundant supply of wholesome water. Moreover, in the valleys of nearly every other principal stream of the state there are numerous deposits of sand and gravel, brought from the mountain region to the west or gathered from the local glacial drift, great enough in extent and with sufficient tributary catchment area to furnish abundant supplies for scores of cities and towns. The Missouri, the Kaw, the Republican, the Blue, the Solomon, the Smoky Hill, the Neosho, the Cottonwood, the Verdigris, the Osage, not to mention numerous smaller streams, all have sand or gravel deposits of this character. Also, at many places in the state not included in the areas just described, by going deeply enough into the ground it is possible to develop large quantities of good and wholesome water from rock fissures or from deep-lying beds of sand.

In consideration of these facts, and especially in view of the great need of many Kansas municipalities for better water, the Board of Health has been preaching the gospel of ground water supplies upon every possible occasion. Particularly has this been true with reference to those cities which, while situated in or adjacent to the bottoms of large streams, draw their supplies from surface sources and pump the water into the distribution mains without thorough purification. Within the year the Board of Health

has had more or less to do with the adoption of new ground water supplies by over a dozen cities previously supplied with surface water or inadequately or improperly supplied with ground water, among them being the cities of Emporia, Fort Scott, Lawrence, Beloit, Wellington, Kingman, El Dorado, and Concordia.

A large and important part of the work of the past year in connection with water supply has been in the line of furnishing advice to city councils and water committees. Many times during the year has the secretary been asked by the mayor and council of a city to visit or to send a representative to investigate, for example, the condition of the local water supply in order to determine whether or not it is safe and wholesome and good; to examine the local situation and advise with reference to the possibility of securing a better supply at a reasonable cost; to advise with reference to the renewal of franchises with private water companies; to inspect the operation of water-purification plants and recommend possible betterments; and so on.

Although this work is outside the scope of the present law, it is of the greatest importance and should be continued.

This leads to the consideration of a proposed amendment to the water and sewage law which would undoubtedly be of very great advantage in the protection of the public health. In many if not most places the operation of the waterworks is directly in charge of some official who has been selected because of his fitness to operate boilers and engines and pumps or to handle gangs of men, but who has little knowledge of matters relating to the sanitary quality of water and a small conception of their importance. As a result of this condition many municipalities are being served with water of distinctly poorer quality than it would be possible to obtain from their present sources of supply, their present equipment, and the present cost of operation, provided the methods of operating their waterworks plants were somewhat modified in detail. Moreover, it is happening that water-purification plants, the plans for which have been carefully drawn and have been approved by the Board of Health, after construction are turned over to some waterworks superintendent whose principal endeavor is to obtain a satisfactory degree of efficiency from his steam plant and pumping machinery, and who thinks little and knows less about the wholesomeness of the water he is pumping into the mains. Again, there is the waterworks system, usually, though not always, owned by a private company, serving to its customers water that is distinctly unsafe for domestic use because of demonstrated sewage contamination, or unsightly or unwholesome because of mud, bad odors or excessive mineral impurity, and resolutely declining to use better purification methods or to obtain a new supply of better quality, simply because of a small added expense.

In view of the above, it is believed that the water and sewage law should be so amended as to give to the State Board of Health a certain degree of control over the operation of waterworks plants furnishing water to the public, to the end that the sanitary quality of the water so supplied might be somewhat looked after. For example, in the operation of a municipal filtration plant, it might reasonably be required that the filter attendant should make a simple test each day of the condition of the raw water pumped from the river or pond, and that the amount of the coagulant to be used during that day be based upon this test; that the coagulant be uniformly mixed with the water by some proper device instead of being merely dumped in occasionally; that the filters be operated at rates within the limits sanctioned by good filter practice, instead of being used merely as rapid strainers, with the end in view of obtaining an effluent free from disease germs as well as free from mud; that the filters be washed at the proper intervals as shown by a loss-of-head gauge; that the filter effluent be tested occasionally; and finally, that all these operations be recorded in a proper record book. Such a requirement would set a decided limit to the all too common present practice of guessing at the condition of the water and then guessing at what to do for it; and then, if this method of procedure is found to produce bad results, of guessing again. It would also make it possible, in case of any question subsequently arising, to trace back the operation of the plant and discover the cause of the irregularity. Also, it should be

made impossible for a waterworks superintendent to cut out the filters in order to make repairs, or for any other purpose, or to use impure water from some emergency supply without giving a fair warning to the public.

With respect to the preservation of the streams of the state from unreasonable contamination from sewage, the water and sewage law contains provisions similar to those pertaining to water supply.

Sewage is defined as "any substance that contains any of the waste products or excrementitious or other discharges from the bodies of human beings or animals," and it is made the duty of "sewerage companies and of the public health authorities having by law the charge of the sewer system of every municipality in the state from which sewage was being discharged into any of the waters of the state at the time of the passage of this act to file with the State Board of Health, within four months after the passage of this act, a report of such sewer system, which shall comprise such facts and information as the State Board of Health may require."

A penalty of fifty dollars per day is provided for failure to file reports as required.

In much the same way as that previously described in the case of waterworks, blank forms were provided by the secretary, and reports were received from practically all the sewerage systems of the state, and filed away for permanent record.

In the case of new sewerage systems, or of extensions of old ones, the law provides as follows:

"Upon application duly made to the State Board of Health by sewerage companies or by the public authorities having by law the charge of the sewer system of any municipality, the governor of the state, the attorney-general and the secretary of the State Board of Health shall consider the case of such a sewer system. . . . and whenever it is their unanimous opinion that the general interests of the public health would be subserved thereby, the secretary of the State Board of Health may issue a permit for the discharge of sewage from any such sewer system into any of the waters of the state, and may stipulate in the permit the conditions on which such discharge may be permitted. . . . Every such permit for the discharge of sewage from a sewer system shall be revocable or subject to modification and change by the State Board of Health, on due notice, after an investigation and hearing. . . ."

"The penalty for the discharge of sewage from any public sewer system into any of the waters of this state without a duly issued permit, in any case in which a permit is required by this act, shall be \$500, and a further penalty of \$50 per day for each day the offense is maintained. . . ."

In the case of sewers owned by individuals, private corporations and companies, the discharge of sewage is allowed to continue "unless, in the opinion of the State Board of Health, the discharge of such sewage may become injurious to the public health," in which case it may be ordered discontinued.

In the operation of this part of the law the Board of Health has investigated and passed upon the discharge of sewage at the following-named places: Winfield, Larned, Caney, Atchison, Wellington, El Dorado, Fredonia, Coffeyville, Independence, Frankfort, Galena, Pittsburg, Iola, Hutchinson, Wichita, Lawrence, Chapman, Blue Rapids, Cherryvale, Concordia, Dodge City, Sterling, Stafford, McPherson, Newton, and Peabody.

In the case of a sewerage system coming up for approval, it is the inviolable practice to make a personal examination of the stream into which the sewage is to be discharged, to obtain from good large scale maps, or from other sources, its drainage area, and to secure from old settlers reputable evidence as to its minimum flow. Data are taken in regard to the fall of the stream, the velocity of its current, the character of its channel, and the proximity of residences or industrial establishments to the proposed sewer outlet. The details of the design of the sewer system are also studied, such matters as minimum grades, provision for flushing, and the elevation of the sewer outlet above the ordinary stages of the water in the stream being given especial consideration. A careful estimate is made of the probable

amount and character of the sewage to be carried by the system during, say, the next five years. Then, in case there is no water supply further down the stream to be affected, the sewage is usually allowed to be discharged under conditions that will protect the stream from becoming a local nuisance. This may mean complete purification of the sewage before its discharge into the stream, partial purification, or no purification at all; depending on a number of the factors previously mentioned, but mainly upon the relative amount of water in the stream at the ordinary low-water stage as compared with the probable amount of sewage.

In case some water supply will be affected by the presence of the sewage in the stream, the best adjustment possible is made between the conflicting interests involved, each such case being recognized as a separate problem calling for a particular solution.

In the matter of sewerage, as in that of water supply, the Board of Health has been frequently called upon by city councils to furnish advice, and these requests are increasing in number. Since after a good water supply there are few things of greater sanitary value to an urban community than an efficient sewerage system, that State Board of Health should have facilities for meeting fully these demands.

With reference to sewerage systems, a desirable amendment to the law would be one giving the State Board of Health a degree of control over their operation as well as their original design. One of the weak points of American municipal government is that after the municipality has spent a large sum of money for the construction of some municipal improvement, let us say a water or sewage-purification plant, or some other delicately balanced organism, it turns the whole improvement over to a minor official and forgets all about it. The minor official is not always technically fitted for the charge, is usually underpaid, considering the character of the work he ought to be prepared to do, and the conditions under which he works are not such as to lead him to take a personal pride in securing the best possible results. Without this incentive to good work, and with no supervision and no expert advice available, it is small wonder that he allows the operation of the plant to become distinctly low grade in character. This is particularly true of sewage-disposal plants, which bring in no direct money returns to the city, and which are too frequently regarded merely as an unfortunate burden.

The following are some of the special lines along which it seems desirable to develop the work in the future.

In the first place, the work of going over and approving engineering plans for waterworks and sewerage systems must be carried on, and to this a somewhat larger allotment of time should be given. Each case of this kind will require a special study and investigation, as heretofore.

Second. The advisory work of the Board might be somewhat increased, with good results. The meeting with city councils and local health boards and the coöperation with city engineers, waterworks superintendents and boards of public works in planning for and in operating water and sewage works is beneficial to both sides.

Third. In order to be able to be of the most service, and particularly in order to establish certain standards, it is desirable that a study of the operation of the present sewage-disposal plants in Kansas be entered into. This has already been begun, and it is hoped to be able to get out a report on it during the coming year.

Fourth. There are certain kinds of industrial wastes at present polluting some of our streams. These are mainly creamery wastes, slaughterhouse wastes, oil wastes, and beet-sugar wastes. The proper disposal of each of these should be studied. A certain amount of work along this line is already planned for the coming year.

Fifth. A study should be made of certain water-purification methods, having in view the waters of our own state. Similar studies have been made many times with eastern waters, and in a number of instances with waters from the Mississippi and Missouri rivers and from other streams in the Mississippi valley. A great service would be rendered to the various water-purification plants of our state if our own local waters could be correlated with these others. It is hoped to secure in this work the coöpera-

tion of several waterworks superintendents having in charge the operation of municipal water-purification plants.

Sixth. It is hoped during the coming year to make a careful sanitary survey of the Kaw and Neosho rivers. Such a survey would include studies of the average and minimum discharge of the streams at various points, the tributary drainage areas, the amount and character of sewage pollution, and a comprehensive study of the capacity of the stream to purify itself. Especially in the case of the Neosho river, which is used both as a source of water supply and as a carrier of sewage by a number of fair sized cities, is such a study desirable.

During the past year, in spite of the lack of adequate time for the work and the handicap of having practically no money to run on, advantage has been taken of every opportunity to study the problems involved in the operation of this law, and to get acquainted with the ground. The problems of sanitation are always complex, because of the many interrelations between different communities and between different interests in the same community. So thoroughly is this true that it is just as impossible for any one community to be clean by itself as it is for it to live to itself. It cannot be clean and maintain high sanitary standards unless its neighbors do likewise. Good sanitation is not a local matter relating to this or to that community alone, but a state-wide matter, relating to all communities together, and particularly to all those situated upon the drainage area of the same stream. For many purposes it is most convenient, logical and fair to consider the sanitation of the drainage area of a single large stream as a single distinct problem.

The problem before us is a big one, and one that will grow bigger as the years go by. It will be wise, therefore, to plan the work broadly, to lay the foundations securely, to proceed slowly if need be, but above all to build well. To secure the best and most permanent results it is absolutely necessary to take a long look ahead. The people of Kansas are largely American in birth, training and mode of thought. They are thinking people, and thinking people everywhere are rapidly coming to a better appreciation of the value, the real necessity of clean living. The sanitary standards of ten or twenty years hence will be ahead of the sanitary standards of to-day, and it behooves us who are now laying the foundations of this work to plan the structures broadly and well so that it will endure.

Respectfully submitted.

W. C. HOAD,
Sanitary Engineer.

REPORT OF J. T. WILLARD, FOOD ANALYST.

To the State Board of Health:

The analyses made for the State Board of Health within the past year have been very much increased, as an assistant, Mr. C. A. A. Utt, has been employed, who gives his entire time to this work. The investigations concerning the proper water content of oysters and the possible presence of copper in them as a normal constituent have been continued, the work for the most part being upon authentic samples secured from cities on the Atlantic coast. Samples of canned so-called "cove" oysters, as well as fresh oysters, found on the Kansas market, were also examined, the total number of samples being forty-eight. The general outcome of this investigation was the establishment by the State Board of Health of a standard for fresh oysters, requiring that they contain not less than 10 per cent of total solids. The establishment of this standard and the energetic campaign in its support conducted by your secretary and inspectors have resulted in a very noticeable improvement in the quality of oysters on the market. Copper was found in all samples examined, and this metal seems to be a normal constituent of oysters.

Seven samples of cheese were analyzed, these being furnished by one of the large cheese dealers of the state with a view to ascertaining the quality of the output on the market. The result was highly satisfactory, and it was ascertained that Kansas cheese ranked with the best in respect to composition.

A number of samples of butter have been analyzed in respect to fat and water, and a little special investigation of country butter was undertaken with reference to the claim that that article nearly always contains more water than the standard permits. The samples analyzed did not bear out that assertion, though in many instances the per cent of fat was below the federal standard on account of the presence of casein in addition to water. The previously published results of determinations of water in butter had strongly roused public interest, and this, with the activity of the internal revenue office, has produced a marked change in the attitude of butter manufacturers toward the problem of watered butter. In a number of instances heavy fines have been assessed by the revenue officers on account of an excessive amount of water in butter, and it is safe to say that in this respect the situation has not been so favorable to consumers for many years as it is now.

One hundred and seventy-five samples of milk, cream and ice cream have been tested, mainly with reference to their fat content. The results with milk plainly indicate that the large milk companies of our cities are furnishing blended milk to their customers in which the fat content is brought as low as the standard will permit. The sale of such milk should be conducted only under conditions which inform the customer of the nature of the milk. This is required by the standards of this state and of the United States. The standards established are designed to provide for genuine milk of exceptional animals, and for the mixed milk of herds such as is distributed by the large milk companies a higher standard should be provided. Under the present standard pure milk and skim milk may be mixed to a certain extent without special danger of detection.

An important part of our work during the year has grown out of an examination of canned salmon. This article, when tested for sulfites by the ordinary process, seems almost invariably to yield a positive result; that is, sulfur compounds are evolved which by oxidation yield sulfuric acid, which is detected in the ordinary way by means of barium chloride. Winton has called attention to the danger of error in this test because of the liberation of sulfur compounds from the meat or fish itself, independent of any addition of sulfites. He proposed obviating this difficulty by passing the evolved gas through a solution of copper sulfate. In our experience with salmon we found that to hold back sulfur compounds of this kind it was necessary to pass the gas through two wash flasks containing copper sulfate. It was found possible to detect distinctly 2.3 milligrams of sulfur dioxide per 100 grams of fish after passing the gas through two wash flasks, no reaction being obtained under the same conditions when sulfites had not been added. The evolution of sulfur compounds from animal foods is much greater when they have undergone incipient decomposition, and the question arises as to whether or not the salmon on the market has undergone any such change. If not, salmon readily gives off sulfur compounds in its natural state, and this must be carefully guarded against in testing for sulfites.

Similar experiences were met in the examination of canned corn, nine samples of which were tested. Some unquestionably contained added sulfites, while others gave an indication of them that may have been due to sulfur compounds in the corn. Still others seemed to be free from this complication.

Several brands of package cereal goods were examined with reference to the net weight of the contents. Five packages of each kind were examined, and these were found in every case to be light not only in net weight but in gross weight. Since our law does not require a statement of weight, the manufacturers will probably change their carton so as to make no statement concerning weight and continue to furnish the light packages. It would seem that the interests of consumers would be served by a provision of the law requiring a statement of net weight on all package goods, and that manufacturers would be in no wise injured by such a requirement.

Eighteen samples of flour have been tested for moisture, with the result that most of them were found to be well within the limit required by our standards. A considerable number of samples of meat, codfish, vegetables,

condiments and miscellaneous preparations have been examined, and the results of most of these have been published in the *Bulletin*.

There can be no doubt that the condition of the market, as disclosed by analyses made before the Kansas food and drugs law went into effect and those made since that date, has very much improved. The difference between old goods and new goods of the same brand, the amendment of brands so as to avoid misstatements, and the general attitude of watchfulness on the part of both dealers and consumers, show that a great improvement has taken place. Ample quarters and increased analytical force would enable a much greater number of tests to be made, and these should be provided, but to do so will require more liberal appropriations to the College by the legislature. The present provision for this work was made after the budget of requests had gone to the legislature.

Respectfully submitted.

J. T. WILLARD.

REPORT OF DRUG LABORATORY.

To the State Board of Health:

In reporting to your Board the progress of the department of drug analyses, we desire to call attention to the fact that at the outset we were obliged to face the conditions incident to the commencement of any such enterprise. After the legislature had legally placed the drug analysis at the University it was necessary to set aside an adequate room and to equip the same especially as a drug laboratory. After some delays, common to mechanical work, the laboratory was finally installed in November, 1907.

The first call of any note upon the department for work was in the direction of a certain class of preparations called "orphans," because of their unknown parentage, as it were, or because of their having become, in a measure, obsolete. The work on this class of preparations consisted of ascertaining two principal facts; first, the percentage of alcohol contained therein, and second, ascertaining whether they contained any proscribed ingredients, as morphine, cannabis indica, or other habit-producing drugs. Of this class of preparations the department has analyzed and reported upon 150 samples. This class of work was made necessary in order to relieve a certain pressure brought to bear by retail pharmacists, who claimed they could not comply with the law in this class of goods. The department, endeavoring to relieve the commercial side of trade as far as possible, has supplied the above data, making it possible for the retail druggists to comply with the law and get rid, if possible, of all this stock. It is gratifying to state that our inspectors report that the class of patent medicines named is rapidly disappearing, and that the work of the department has had a decided influence in weeding out the same. It should be noted, in passing, in our examination of some of the patent medicines it was found that deterioration had taken place, and this part of the investigation has been worth to the public all that it has cost to bring to light the fact that a patent medicine, although neatly wrapped and concealed from view, may contain a more than worthless, not to say harmful, preparation. The following up of this lead, which has been inaugurated in the laboratory of the University of Kansas, will develop into a very important means of protection to the public, which the law aims to direct itself. Following the investigation, we would cite as prominent among the other numerous articles examined, 250 samples of spirits of camphor, 30 samples of various spices, 100 samples tincture of iodine, 20 samples spirits of nitrous ether, 40 samples of alcohol, and 50 samples of liquors of various kinds.

We should state, in connection with the samples of alcohols, that it was discovered that the supply of this solvent coming into the state from certain manufacturers was substandard. The United States Pharmacopœia requires practically 190° proof alcohol, and we found that there was being supplied by wholesalers and manufacturers a 188° proof alcohol. We called attention to the fact to the manufacturers that the alcohol furnished was substandard, and to our surprise our department was criticized for its extreme exactions.

It was claimed that it was practically impossible to furnish the high-grade alcohol which our severe exactions demanded. This little bubble of discontent, however, was soon bursted when a proper investigation by the department was made as to the method of manufacture of the alcohol, and as to the probabilities of the excessive cost of the products of the high-grade alcohol. It was found, for example, that it was perfectly possible, and in every way more advantageous for the retailer, the manufacturer and wholesaler to supply the article as we were directing.

Various samples of teas and coffees have come to this department, also tablets, pills, etc. These need not be mentioned in detail. Numerically, we may report that up to the present time there have been made 750 analyses. Some of these have not been reported through the regular channel of the Board of Health because they were not all collected by inspectors. Some have been sent in by individuals who were anxious to avail themselves of the service of the department. This has been freely given wherever possible. During the year which is to come, I am very much gratified to report that we shall be able to have returned to the University Mr. L. D. Havenhill, who has been in the United States Department of Agriculture in the bureau of drug analysis during the past year. Owing to the fact that we shall now be obliged to inaugurate a certain amount of research work, this addition to the personnel of the department is exceedingly gratifying. During the past year Mr. Ziefle has been obliged to carry the analytical work in connection with the classroom and laboratory instruction. It has absorbed his days and almost nights to get through with the enormous amount of work that came to the University. In order that we shall enter into the field which is now absolutely necessary it is very important that greater time should be given, and more deliberation to the strengthening of the department in the directions named; it is hoped that we can relieve Mr. Ziefle and leave him freer for such investigative work.

In this connection we will also state that the collaboration of this laboratory is asked for by the department of drug analysis of the United States Board of Agriculture, which has already sent in material for research work.

As to the immediate needs of the department we desire to call the attention of your Board to the fact that we are now absolutely obliged to fit up an additional room for the purpose of operating the analytical balances, polariscope, and other instruments of precision which are necessary for certain work. Our appropriations for fitting up and equipping the one room above mentioned have exhausted all the available funds, and we especially ask that your Board shall use its influence toward obtaining for us, through the chancellor and regents, the additional room. It should be stated that the chancellor's attention has been called to this need, and he has expressed himself as entirely in accord with our wishes, and while the available funds for the present biennium are all spoken for, he will endeavor to do all in his power to bring about that which the Board feels it demands.

Consultation with Professor Bailey has developed the fact that it seems essential to the proper execution of the law that we shall have meetings with the inspectors, with the chief food and drug inspector, at the University at least twice a year. Questions which arise can be settled very much more rapidly and satisfactorily by conference, and the procedure of the laboratories in their part of the execution of the law can be facilitated.

L. E. SAYRE, *Drug Analyst.*

REPORT OF CHEMIST.

Kansas State Board of Health:

GENTLEMEN—The chemistry department of the State University begs leave to make the following brief report on the work for the Board of Health during the past year in the enforcement of the food and drugs law of February 14, 1907:

Beginning with August 1 of last year, the University afforded the department the help of Prof. H. L. Jackson, a graduate of the Massachusetts Institute of Technology, who has devoted a large proportion of his time to

the chemical examination of foods. He has had some teaching to do, however, but during the coming year the amount of teaching will be very small.

We have taken up the analyses of those products that seemed most important and in which there was the greatest evidence of adulteration or misbranding. It has been found to be much more economical, in the work of the laboratory, to concentrate the attention of the chemist upon one or two special food products exclusively for a time. Much more can be accomplished by carrying on a series of analyses of the same material than by scattering the work upon a great variety of products.

In this way, therefore, we have taken up the analysis of extracts, including lemon, vanilla and synthetic or artificial fruit extracts. In many cases, when we have found the material to be below standard or misbranded, we have communicated directly with the manufacturers or jobbers, calling their attention to the illegal products bearing their name in the grocery stores in this state. Almost without exception they have agreed to have the articles returned to them by the retailer, or to send proper labels. In fact, several jobbers have sent out circulars to all their traveling men telling them to take up all such illegal goods. We have felt that this was the best policy to follow temporarily while we were cleaning up the market of the old stock. This practice of course cannot continue, as legally the retailers are liable for selling goods improperly labeled and not up to standard quality.

Another line of work has been with vinegars. We find on the market not only cider vinegar, but a vinegar obviously made from a second pressing of the pumice, after the addition of water, which has been reinforced by the addition of distilled vinegar. There is also a glucose vinegar which is made from the so-called grape sugar, or glucose, which has been heated to so high a temperature as to caramelize the material and so impart a brown color to the product in imitation of cider vinegar. Another vinegar on the market is that made from brown sugar by direct fermentation and oxidation, and finally, the ordinary distilled vinegar, which should be colorless, but in some cases has been colored with caramel in imitation of cider vinegar.

As the retailers are not allowed to handle artificially colored vinegars after July 1, we have been getting a line upon all the vinegars manufactured, and have been in correspondence with the manufacturers and jobbers, both in this state and elsewhere, with a view of having all the irregularities corrected before July 1.

Many other samples of foods have been examined during the past year, including alcoholic beverages, soft drinks, meat preservatives and food accessories.

STATE WATER SURVEY.

The laboratory has also been actively engaged during the past year in the examination of surface waters of the state, practically completing the work which was begun late in the fall of 1906. We now have a series of analyses of daily samples taken from twenty-three stations upon the rivers of Kansas, and these analyses cover, in most cases, more than twelve months. We thus have an opportunity to study the composition of the waters at different stages. This work will be continued for a few important streams, but practically it is completed, and the results are being worked up by Mr. H. N. Parker, of the United States Geological Survey at Washington, and will be published shortly. Prof. F. W. Bushong has had charge of the work here and has devoted a large proportion of his time to its completion. However, the coming year he will take another class of work, but the laboratory work will be carried on by Mr. Archie Weith, under the direction of the head of the chemistry department.

In addition to what has been previously mentioned, we have made a large number of sanitary analyses of waters from various streams and of city supplies, and have begun investigation of pollution of rivers from industrial wastes and from sewage of cities. The first report of this work appeared in the *Bulletin* of the Board of Health for April.

On February 24, in company with the secretary of the Board, I visited Niotaze, in Chautauqua county, for the purpose of investigating the water from an oil refinery, of which the neighboring farmers had made complaint. We found that a large amount of sulfuric acid was discharged into a small

stream and finally found its way into Caney river. We believe that the injurious effect of this waste on fish in the stream, and possibly on cattle which drink the water, might be practically eliminated if the sludge or waste acid was stored for a while in tanks or ponds in contact with broken limestone. In this way the acid would be neutralized and the comparatively harmless calcium sulfate would be discharged into the stream.

There are, with the increasing industrial activity in this state, many manufacturing plants which are discharging waste into the streams, which is liable to prove not only destructive to fish but a menace to the health of those living in the vicinity. It renders the water unfit for drinking purposes, and when the stream recedes in dry weather a large amount of organic material is left on the banks to slowly decay and pollute the air.

This dangerous waste comes especially from oil refineries, packing houses, slaughterhouses, canning factories, sugar works, paper mills, creameries, and butter factories.

This state has without doubt reached that stage where during the next ten years it will make great material advances in manufacturing industries. This is plainly indicated by what has taken place in other states, as in Iowa and Illinois, whose development was a little earlier than our own. This is then especially the time, as these establishments are being founded, that the increased pollution of the streams should be jealously watched. It is easier to regulate this pollution in the beginning than to take care of the nuisance when the industry has become well established.

The question of whether sewage shall be allowed to be turned into the streams of the state, and the extent to which sewage purification should be required also demands attention. This is a problem which must be taken up separately for each locality, for the conditions that prevail in New York or Illinois are not necessarily those which hold in a given Kansas town.

We wish to call your attention then to the fact that increased appropriations are needed to investigate this industrial waste, to find its effect upon the water, and to suggest methods for a proper and economical disposal of the same.

In order to do efficient work the chemical laboratory should have more assistants for the next year. When the food and drugs law was passed, in February, 1907, the University budget was already made up, and it has been practically impossible to get additional assistants during the biennium. We should be in such a position that we can take up and investigate food products as rapidly as they are sent in to the laboratory. We are a long ways behind in our work at the present time, and for many months the inspectors have been told to send in only the most important food products. We have not been able to do any aggressive work whatever, on account of lack of sufficient help. We ask the assistance of the Board in seconding our request to the board of regents of the University and the legislature for increased help next year.

Respectfully submitted.

E. H. S. BAILEY,

Chemist.

REPORT OF SECRETARY.

To the President and Members of the State Board of Health:

GENTLEMEN—Early in June torrential rains in the watershed of the Kaw and Neosho rivers caused a repetition of the disastrous flood of 1903, although the water did not reach the high point of that memorable flood, yet the damage to property, both rural and urban, reached into the millions. It was thought to be in keeping with the duties of this Board under the general health laws of the state to make, or cause to be made, a sanitary inspection of the points which seemed to suffer most in a sanitary way by injury to sewerage systems and water supplies, and the deposits of silt and waste upon the receding of the waters. Accordingly, Professor Hoad, the sanitary and civil engineer of this Board, in company with the secretary and the city engineer of Topeka, made a sanitary investigation of the conditions in North Topeka. It was found that the sewerage system had suffered very materially by cave-ins, and that it was impossible to drain certain portions

of the city by reason of this fact, allowing pools of water to become stagnant, much to the annoyance and disturbance of the near-by residents. It was therefore suggested that these ponds be thoroughly oiled in order to prevent the nuisance of the mosquito, and that temporary drains be established to take the place of the storm sewers. The city authorities seemed to be alive to the necessity of vigorous and prompt action in cleaning the streets and placing in repair the sewers, which was speedily done.

In company with Doctor Coburn of this Board, and the secretary and president of the Kansas City Board of Health, your sanitary and civil engineer and secretary made an inspection of the flood conditions in Kansas City, Kan., and Argentine. Similar conditions were found in these cities as in Topeka, and like suggestions made, which we understood were followed as nearly as possible. This inspection developed a most interesting sociological as well as sanitary condition, as found in a section of Kansas City adjacent to the packing-house district and known as "The Patch." In this place the unsanitary conditions found were well-nigh indescribable, with a density of population exceeding that of any similar area in Kansas City. The decay of vegetable matter in the numerous pools of stagnant water was so active as to give to the water the appearance of being over a huge fire, and the water furiously boiling; this appearance being occasioned by the rapid evolution of marsh gas. Flies, pestilential odors and ill-kept foreigners presented a picture which will never be forgotten. Notwithstanding these unspeakably unsanitary conditions the people seemed to be contented and happy. We are advised that the city board of health ordered a general clean-up in this section, which was done.

Aside from the great destruction of property the menace to the city water supplies of Topeka, Lawrence and Kansas City seemed to be the most serious aspect of this flood, for in each instance the people of these populous and thriving cities were served a straight river water for a considerable time during and after the flood, by reason of injury to the water-distributing system. The prevention of these recurring floods, therefore, is not only an economic problem but an important sanitary one as well, and shows the urgent importance of such means and measures as will properly safeguard the water supply of this large population. I therefore recommend that the Board by resolution call attention to this additional menace of the floods, and indorse legislation looking towards its control, and particularly recommend to the congressmen of this state a large appropriation to the United States Geological Survey for the purpose of reestablishing gauging stations on all the rivers subject to floods in this state.

Upon a formal complaint by an attorney representing certain parties in Geuda Springs, who alleged that the water from the springs was contaminated by sewage from the town, the secretary, in company with Professor Hoad, made a visit to that point for the purpose of investigating the complaint and securing samples of water for bacteriological analysis. The investigation, while not conclusive, seemed to indicate the possibility and probability of the springs becoming contaminated during the seasons of heavy rains or flooded conditions in the Arkansas river. Certain suggestions were made to the owner of the springs whereby this contamination might be prevented, and we have his assurance that these suggestions will be followed out. A second investigation of the Arkansas City water supply seemed to prove beyond a doubt that the supply at that city, which hitherto has been considered to be especially pure by reason of its being secured from a large spring, was contaminated with surface drainage from near-by swamps, all bacteriological samples showing the presence of the *Bacillus coli*. Professor Hoad's report will no doubt tell more in detail of the conditions found at these places. Recommendations were made to the city authorities, and we have their assurance that the same will be carried out at the earliest possible date.

On August 4 to 8, the secretary, in company with Professor Bailey, the food analyst of the Board, attended the Eleventh Annual Conference of State and National Food and Dairy Departments, at Mackinac Island, Mich. The meeting was represented by the commissioners of thirty-three states and by a large delegation representing the federal government. The pa-

pers were of a high order of excellence and much useful and valuable information was obtained. The dominating note of the convention was to the effect that the time had come for stricter enforcement of the laws against adulteration and misbranding, and for a uniform law throughout the United States based upon uniform standards for foods and drugs, and uniform requirements as to sanitation of the same. Considerable complaint was made by the commissioners as to the weak points in the national law, and of the failure of the federal officials to cooperate with the states in the enforcement of the same. A so-called radical was elected president for the ensuing year, which seems to indicate that the temper of food enforcement officials is such as to demand a literal and strict compliance with the food and drugs laws.

A former resolution of the Board had limited the time for the sale of pickles containing alum to September 1, 1908. Previous to this date a number of letters were received from jobbers requesting that additional time be given for the disposal of these products, as there were large stocks in the hands of both jobbers and retailers; whereupon a letter of inquiry was sent to all jobbers in the state, asking them to submit an invoice of goods on hand, and to make an estimate as to what amount in their judgment was still in the hands of the retail trade. Upon receipt of this information the following letter was submitted to each member of the Board, asking for his vote upon the proposition:

"Dr. A. B. Scott, President, Jetmore, Kan. :

"AUGUST 28, 1908.

"DEAR DOCTOR—At the annual meeting of the State Board of Health, held a year ago, the following resolution was unanimously adopted: 'That it is the belief of this Board that the use of alum in pickles is detrimental to health, and should therefore be prohibited; and resolved, That after September 1, 1908, the sale of food products containing alum shall be prohibited.'

"Notice of this resolution was given the widest publicity, both in the *Bulletin* and the daily press, and by our inspectors, but as the time approaches for the enforcement of this resolution a number of wholesale grocers have protested on the ground that there are large stocks still in the hands of the jobbers and the retail trade, and that the prohibition of their sale at this time would create large financial losses.

"In order to receive trustworthy data concerning this matter, a circular letter was issued to each jobber in Kansas, a copy of which is herewith inclosed, and replies have been received from a majority of those addressed. A summary of the information thus collected seems to indicate that there is somewhere between \$20,000 and \$50,000 worth of alumed pickles in the hands of jobbers and retailers in this state at the present time, and thus should the resolution above be enforced it would create a financial loss approximating this amount. The jobbers have expressed a belief that January 1, 1909, would be sufficient time to dispose of the stocks on hand, but if an extension of time is permitted, it is evident that the retailers should have an additional extension over this date. It is therefore submitted and recommended that the extension of time for the disposal of food products containing alum be granted to the jobbers up to January 1, 1909, and that the retail trade be permitted an extension of time up to September 1, 1909, with the following provisions:

"1. That further extension of time will not be considered.

"2. That it is distinctly understood that jobbers shall not replenish their stock with alum goods, but with only such as will comply with our standards and requirements.

"3. That each package of food products containing alum shall bear a label with a distinct statement of its presence.

"Kindly advise me by return mail, if possible, whether you vote Yes or No on this proposition.

Very truly yours,

S. J. CRUMBINE, Secretary."

The vote returned by the members was unanimously in the affirmative,

when the following circular letter was issued to dealers in this state, extending the time for the sale of alum pickles upon the conditions named :

"KANSAS STATE BOARD OF HEALTH,
FOOD AND DRUGS DEPARTMENT,

TOPEKA, September 2, 1908.

"To Wholesale and Retail Grocers:

"An estimate based on information submitted by the wholesale grocers, and by the department inspectors, would seem to indicate that there is still remaining in the hands of the jobbers and retail grocers of the state a large amount of pickles and other similar products which contain alum; and, should the ruling prohibiting their further sale after September 1, 1908, be enforced, it would entail a loss of \$30,000 to \$40,000.

"As it has been the policy of this department from the beginning to enforce the food and drugs law with as little financial loss and burdensome regulations as is consistent with a reasonable regard for the interest of the consumers, for whose welfare the law was enacted, the State Board of Health has thought it proper to extend the time for the disposal of such food products as contain alum, on the following conditions:

"1. That wholesale dealers be allowed to sell such pickle products as they may have on hand until January 1, 1909, provided that each package be stamped or tagged with the following legend: 'On hand September 1, 1908,' and that each label bear a statement of the presence of alum; and provided, that jobbers may not replenish their stock with alumed pickle goods after September 1, 1908.

"2. That retail dealers be allowed to sell such pickle products containing alum now on hand or purchased before January 1, 1909, until September 1, 1909; provided, that each package of pickles now in the hands of the retail trade shall bear a legend or tag, 'On hand September 1, 1908'; that the label on each package shall bear a statement of the presence of alum; and provided further, that retailers may not replenish their stock with alumed pickle products after January 1, 1909.

"3. That a further extension of time will not be considered.

Very truly yours,

THE KANSAS STATE BOARD OF HEALTH.

By S. J. CRUMBINE, M. D., Secretary."

Following the expression of the Board at its last quarterly meeting that the time had come for a literal enforcement of the food and drugs law, the department has brought a considerable number of prosecutions for what seemed to be a willful violation of the same, or criminal neglect in noncompliance with its provisions.

During the past summer the services of Professor Billings and Professor Agrelus, of the University, were secured by the secretary for the purpose of investigating the bacterial content of the milk supplies of the larger cities of the first class of the state. The purpose of this investigation was to gain accurate information as to the cleanliness and wholesomeness of the milk product as actually marketed in the cities, and to point out the necessity for careful dairy inspection, and thus to stimulate the good work that has already been inaugurated looking towards the enactment of ordinances in all the cities providing for dairy inspection. It is quite out of the question for a state department to keep tab on the hundreds of dairies, or to systematically examine the milk supply of this great state, hence the campaign for the enactment of appropriate city ordinances, which has been waged during the past year by the state dairy commissioner and this department, and which I am glad to say has been successful in a large number of instances. The report of the findings of this investigation is published in full in the November *Bulletin*.

I am glad to say that the general disposition among the manufacturers and dealers of this state is to heartily comply with the provisions of the law, not only because they are heartily in favor of this splendid measure, but because they realize that it is helpful to their business, in that it insures them a better and higher grade of products of manufacture as well as protects them from the inferior competition of the unscrupulous dealer. There

are a number of instances where the law needs amendment, which will be mentioned under the heading of "Legislative Needs."

On the 26th day of October the secretary first used his new commission as inspector under the national food and drugs law, by filing complaint with the United States district attorney against forty-one cases of Muco-Solvent found in the hands of the Gatlin Drug Company, of Topeka. The Muco-Solvent people, by the advice of their attorney, concluded to make no defense in the case, whereupon, on the 24th day of November, Judge Pollock, of the United States district court, entered a decree under section 10 of the national law, ordering the forty-one cases to be destroyed by reason of the fact that they were misbranded and therefore in violation of the federal act. Publication followed in the *Bulletin*, and inspectors instructed to warn dealers that the further sale of the product in this state was unlawful until they had been redressed with labels complying with both the national and state laws. Thus was brought to a successful conclusion a suit against a company that was practicing a very dangerous form of misbranding, in that they alleged it to be a cure for diphtheria.

The following circular letter was addressed to the wholesale druggists of Kansas and Missouri:

"STATE BOARD OF HEALTH,
DEPARTMENT OF FOOD AND DRUGS,
TOPEKA, KAN., December 2, 1908.

"To the Wholesale Druggists of Kansas and Missouri:

"GENTLEMEN—I desire to call your attention to the article in the last issue of our *Bulletin* (No. 11), under the caption of United States *versus* Muco-Solvent, and to give you notice that sales of this preparation under its present wrapper will be contested in the courts. The company have signified their willingness and desire to relabel all their goods on the market, and you can therefore have such stock as you may have on hand legalized by making application to the Muco-Solvent Company of Chicago.

"I desire to also call your attention to the fact that there are still quite a number of patent medicines being sold by the jobbers to dealers in this state that are grossly misbranded under both the national and Kansas food and drugs act. The department believes that the jobbers are quite as competent as this department to determine what goods are illegal under the law. We believe, therefore, that we have not only a legal but a moral right to insist that the further shipment of misbranded patent medicines to the dealers in this state shall cease, and I take this method of giving you a last word of admonition.

"I am particularly impressed with the dangerous form of misbranding which is so frequently observed in the so-called 'diphtheria cures,' such as the medicine above alluded to.

"Science is now of but one opinion—that there is but a single remedy that can with any degree of certainty be relied upon in the treatment of this often rapidly fatal disease, and as time is such an important element in its treatment, and as the innocent child to whom this medicine is applied has no choice in the selection of a remedy, this department believes that it is the duty of the state to protect these children from the fraudulent and criminal preparations which allege to cure this feared and dreaded disease.

"I trust this may appeal to you in the manner in which it does to the writer, and that your department managers may be instructed to follow out fully the spirit as well as the letter of the law.

Sincerely yours,

S. J. CRUMBINE, M. D.,
"Chief Food and Drug Inspector."

UNDRAWN POULTRY.

The attorney-general gave an opinion that section 7, *sixth* under "Foods," applies to the sale of undrawn poultry, game and fish, in that the entrails of such poultry, game and fish were unfit for food, and therefore prohibited to be sold as such under the food and drugs law.

The following opinion handed down by the attorney-general was embodied in a circular letter to inspectors, as follows:

"To Food and Drug Inspectors:

"NOVEMBER 10, 1908.

"On October 24, the following communication was addressed to the attorney-general:

"This department desires an opinion as to whether the manager or proprietor of a hotel, restaurant or dining car would be in violation of the food and drugs law if he served imitation or substitute articles of food for those stated upon the menu. For example, if the menu calls for buckwheat cakes and maple syrup, and there was served instead of maple syrup an imitation syrup with or without maple flavor, or a cake made from other than buckwheat flour, would it be a violation of the law? If a hotel or restaurant served oleomargarine instead of and for butter, even if the printed menu did not mention butter, and the waiter did not announce it, would it be in violation of the food and drugs law? If a hotel or restaurant served as coffee an infusion made from a mixture of coffee and chicory, when the person being served asked for coffee, or placed an order with the waiter for such, would it be a violation of the food and drugs law?"

"The attorney-general replied as follows:

"Replying to your letter of October 24, permit me to say that a consideration of sections 1 and 8 of the pure-food law, and particularly subdivision 1, which you mention, leads me to the conclusion that there is no exception made in favor of a hotel or restaurant keeper who serves meals to the public, and as a part of said service of foodstuffs offers certain foods for sale which are imitations of or offered for sale under the name of another article. I am therefore of the opinion that where a hotel keeper or proprietor of a restaurant does serve upon his table as a part of a meal served for pay certain articles which are imitations of other articles of food, and sold under the name of such other articles, that he is guilty of a violation of the pure-food law."

"You are therefore instructed to govern yourselves in accordance with this opinion, and to notify this department of such violations of the law as come to your notice.

Very truly yours,

S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector."

On November 9 a meeting of the inspectors and food and drug analysts and the secretary was held at the office of the chancellor at the University, for the purpose of outlining the work in the food and drugs department for the coming year, and of advising with each other as to ways and means for carrying on the inspection and analytical work. The question of the weights and measures law was fully discussed, and by a resolution the secretary was instructed to request the attorney for the Board to revise the weights and measures law in such a way and manner as to make it more applicable to food and drugs law enforcement as applies to weights and measures. Accordingly the attorney was notified.

At the last quarterly meeting a resolution pertaining to tuberculosis in the day-school teacher was submitted to the state superintendent of public instruction, whereupon he issued circular letter No. 66 to county superintendents, which is as follows:

"TOPEKA, July 14, 1908.

"My Dear Superintendent—I desire to call your particular attention to the following resolution recently adopted by the State Board of Health:

"WHEREAS, Tuberculosis is now generally recognized as a communicable disease; and

"WHEREAS, It has come to our notice that teachers suffering from tuberculosis have been employed in the public and private schools of this state: therefore, be it

"Resolved, That school boards, boards of education, superintendents of institutions, and others who engage teachers as such, are requested to make careful inquiry as to the health of the applicants, especially whether such applicant is suffering from tuberculosis."

"This movement on the part of the State Board of Health is most important and timely. It is undoubtedly true that a number of teachers in ill health and from other states frequently seek employment in the schools of the West. It is also, perhaps, true that an occasional Kansas teacher afflicted with tuberculosis is permitted to teach in our schools. This is a condition that ought not to be tolerated in any schoolroom in Kansas. The presence of such a teacher in any schoolroom is a constant and serious menace to the health of the children.

"I trust you will use your entire influence to prevent the employment as teacher of any person afflicted with tuberculosis, and that if later you discover that teachers in your county or city are so afflicted you will take steps at once to bring about their resignation.

"Your hearty coöperation in this matter will not only be appreciated by myself, but will contribute to the public good.

Very truly yours,

E. T. FAIRCHILD,

State Superintendent Public Instruction."

This action of the state superintendent is commendable in showing that his department is thoroughly alive to the interests of the public health, and that this department can rely upon him for hearty coöperation in all reasonable measures the Board may propose in bettering the sanitary condition of the public schools and health of the children therein.

On November 11 the committee on state institutions made their annual visit to the Penitentiary, at Lansing. Their report, which will be submitted by the committee, shows a satisfactory condition at the State Penitentiary, considering the crowded condition of that institution.

Permits have been issued to the following cities for the extension of old or the installation of new water supplies: Beloit, Bonner Springs, Holyrood, Kiowa, St. Marys, Winfield, Ellinwood, and Washington.

Approval was given to the following cities for the extension of old or construction of new sewerage systems: Bonner Springs, Larned, Minneapolis, Pratt, and Topeka.

Permission was granted to Horton for the discharge of untreated sewage into the natural waters of the state for a period of eight months.

The report of our sanitary and civil engineer will cover more in detail the problems that have come up for solution since the last session of the Board.

From September 21 to October 12 occurred what was probably the greatest meeting of its kind ever held in the history of the world, the International Congress on Tuberculosis. Eighteen representatives from Kansas, including the secretary of the Board, were in attendance upon this meeting. The sessions were held in the unfinished building of the National Museum, which proved to be entirely unsuitable for housing the exhibits and for furnishing audience rooms of sufficient size and comfort, with freedom from noise, as should have been furnished these remarkable sections of the congress. I believe that every American had a feeling of shame and chagrin because of the shabby treatment accorded our international brethren in thus inadequately providing for this important meeting. The secretary is attempting a complete write-up in the *Bulletin* under the caption, "Echoes from the International Congress," to which the attention of the members of the Board is directed, in order that they may get a more comprehensive report of the papers and work accomplished there. It is needless to say that an attendance upon this meeting was calculated to enthuse one in the subject of tuberculosis control, and your representative has returned full and overflowing with ideas and ideals as to what the State Board of Health should do towards the inauguration of a state-wide campaign looking to the suppression of this devastating disease. Upon the 13th of November the plan of calling a public meeting for the purpose of organizing a state society for the study and prevention of tuberculosis was presented to the governor, which met with his approval, whereupon he issued the following proclamation:

"To the People of Kansas:

"No greater scourge afflicts the human race than the dread disease known as 'White Plague.' One hundred and thirty-eight thousand people

succumbed to this disease in the United States in 1906. Because of its altitude, its healthful climate, the absence of large cities with their attendant conditions predisposing to this malady, and the intelligence with which our people have grappled with it, the mortality from this disease in Kansas is relatively less than in most states. Yet the disease is sufficiently prevalent in Kansas to render its statistics most alarming and to incite every lover of his kind to the exercise of every possible precaution to prevent its spread and the application of every known remedy to relieve its distress. In no field of medical research has there been more gratifying progress in recent years than in this one. Beginning September 21 and ending October 12 of this year a great International Congress on Tuberculosis was held in Washington, D. C., attended by over 4000 delegates, representing thirty-three different countries and all the principal civilized governments of the world. Kansas was ably represented in this great congress, and this state should not lag behind in the movement to stamp out this dread disease. Pennsylvania has already shown its appreciation of this work by appropriating \$1,500,000 for the study, care and prevention of tuberculosis in that state.

"Believing this matter to be of sufficient importance to justify the active coöperation of the governor in an effort to place Kansas at the very front of the movement, I hereby invite every one interested in the subject to meet in Representative Hall, Topeka, Thursday, December 3, at four o'clock P. M., to organize an association to coöperate with the national association in a scientific and heroic attempt to stamp out this disease. It is now known that tuberculosis is an infectious disease, and, therefore, always a preventable one. The old theory that it is hereditary has been practically abandoned. The possibility of its cure in many cases formerly thought incurable is now also recognized. The task, therefore, is a hopeful one, and certainly worthy of the best efforts of the best minds and the best hearts in Kansas. I hope that the attendance upon the convention will be large, and that all will come prepared to enter heartily and intelligently into its deliberations.

E. W. HOCH, Governor."

This was followed by a circular letter issued by this department and sent to prominent people of the state, including members of the legislature, county and municipal health officers, and prominent men and women in the social, industrious and religious life of the state, accompanied by a personal letter urging their attendance and assistance in the organization of this association. The letter follows:

"KANSAS STATE BOARD OF HEALTH,
TOPEKA, November 18, 1908.

"To the Patriotic People of Kansas:

"Governor Hoch has issued a call for a conference of all who are interested in the campaign for the study and prevention of tuberculosis in Kansas. When it is remembered that there are approximately 5000 cases of tuberculosis in this state at the present time, that over 100 die of this disease every month in the year, and that if this rate of morbidity and mortality continues there will die of this scourge over 50,000 of the people now living in the state, it must appeal to every thinking patriotic person that something *must* be done, and that *quickly*, to stay the awful ravages of this preventable disease.

"The State Board of Health realizes that the problem is too great for any one individual or board to successfully solve; that it is essentially a problem for the people as a whole, and without their active and cordial coöperation any plans or schemes proposed have already failed before they are begun.

"It is proposed, therefore, to organize a Kansas branch of the National Association for the Study and Prevention of Tuberculosis, which will have affiliated with it the various organized forces already in existence, each one to be an arm or weapon of the central organization, which, together with individual effort, will promise much in the proposed educational propaganda, which is necessarily the chief corner stone of the scheme of prevention.

"It is confidently hoped that a large representative body of people may be present at the initial meeting in Representative Hall, Thursday, December 3, at four P. M.

S. J. CRUMBINE, M. D.,
Secretary.

"Approved: E. W. HOCH,
Governor."

In addition to this it was planned to have the Annual Conference of County and Municipal Health Officers with the State Board of Health held at the time of the quarterly meeting of this Board and the date fixed by the governor for the tuberculosis conference, and thus we might collaborate and outline the work and influence of the various health departments of the state in putting into effective operation the plans proposed. It is confidently hoped that these suggestions may meet with the hearty approval of the Board, and thus will be inaugurated the Kansas campaign for the study and prevention of tuberculosis.

On November 16 Doctor Carver, upon the request of the secretary, went to Pittsburg to confer with the city health officer in the matter of smallpox. His report is herewith submitted:

"FORT SCOTT, KAN., November 17, 1908.

"DEAR DOCTOR—At your request I visited Pittsburg yesterday, and with the assistance of Doctor Dudley, city health officer, found the following cases of infectious and contagious diseases: Smallpox, 45 cases; scarlet fever, 75 cases; diphtheria, 45 cases. I also found that they were very slack in regard to quarantine measures. They had closed one public school in that part of the city where these diseases were most prevalent; I advised them to keep this school closed for at least two weeks, or until the incubation period had expired, as three children in this school had broken out during school hours. The teachers from this school were transferred to other schools in the city. I told them this would not be allowed. I also advised them to see that every scholar going to other city schools show a certificate of vaccination before being allowed to attend. Also, that when a scholar was absent to have the truant officer go to the child's home and learn the cause; if sick, or any member of the family sick, to have that child remain at home until the family physician had rendered a diagnosis. Also to impress upon these subjects the penalty of breaking the quarantine laws. Doctor Dudley, city health officer, and Mr. Kidder, acting mayor, were very anxious and willing to do everything possible to allay these epidemics, but were afraid they would exceed their authority if stringent measures were used. I advised them to impress upon the people that these were state laws and imperative, and that if these suggestions were not fully carried out all schools, churches, theaters, and all places of amusement and public gatherings would be closed and the town quarantined.

Yours truly, J. B. CARVER, M. D."

Shortly after a second complaint came from the city health officer, whereupon I sent the following telegram:

"Doctor C. A. Dudley, Pittsburg:

"You are authorized to strictly enforce the provisions of the quarantine law. Your attention is particularly called to section 5. If I am compelled to go to Pittsburg I shall feel it my duty to quarantine the city. S. J. CRUMBINE."

Nothing further has been heard of the condition at Pittsburg, but it is presumed they have matters in control.

The general health conditions of the state are about as usual at this time of year, there being the average number of contagious and infectious diseases reported to this department by county and municipal health officers. On November 24 the county health officer of Harper county reported by long-distance telephone that he had a case of glanders in a man, who was taken to the county farm for care by the county. He was instructed to take the usual precautions that are taken in infectious diseases. This I believe is the first case reported to this department of this disease in the human.

OUR NEEDS.

As the days and months have come and gone, the work of the department has steadily grown in volume and importance until at the present time we find our present force entirely inadequate to do much excepting to keep from under the daily grind. Our inspection force should be supplemented by twice the number of inspectors. Our office force should be increased; particularly is it necessary that we have a chief clerk. The position of state engineer should be enacted into statutory law, with his duties clearly

defined therein, and ample means provided for these respective officials and their work.

Notwithstanding the great importance of the water and sewage law, no money was appropriated for its enforcement. We should therefore have our sanitary fund increased from the present amount of \$800 to \$2500. The expense fund for holding the quarterly meetings of the Board is entirely inadequate, as the members have personal knowledge, there having been but three meetings for a number of years past, when the law specifically requires that four meetings a year be held. This fund therefore should be increased from \$800 to \$1500. The miscellaneous fund of \$2500 should be increased by \$500, which increase should be made to include the expenses of representatives of this Board to national meetings of various kinds, but particularly to the meeting authorized by Congress, in which the surgeon-general of the Public Health and Marine Hospital Service meets with the health officials of the various states.

The bacteriological department should be enlarged, and its place firmly fixed in the activities of this department by statutory law, and the fund for its maintenance be largely increased. The expense fund of inspectors should be increased from \$75 to \$100 a month, and their salary to at least \$125 a month.

The time has come when the state of Kansas should have an effective vital statistics law, and to that end we bespeak the hearty coöperation not only of the members of this Board, but the profession and people in general, in securing the passage of a bill to be presented to the legislature, which if passed will place Kansas in the registration area of the Census Bureau of the federal government. The very foundation of sanitary science is based upon the actual data of mortality and morbidity, and any department of health must fail of a full measure of success until such time as exact or approximately accurate data may be secured through efficient registration laws. This applies with peculiar force to the infectious diseases of typhoid fever and tuberculosis. It seems, therefore, that the enactment of this law is very necessary in the state-wide campaign against tuberculosis about to be launched.

In this connection, also, the secretary desires to recommend that a law requiring compulsory reports of tuberculosis and typhoid fever be enacted. It was the unanimous opinion at the Congress on Tuberculosis at Washington that in order to wage a successful war against tuberculosis you must have compulsory reporting of all cases to the health authorities; for how may measures of prevention be applied if the centers or foci of infection are undiscovered? It is my judgment that this law is a very necessary one, and should receive the cordial endorsement of the Board. It is believed also that this Board should ask the legislature for an appropriation of at least \$10,000 a year to be expended specifically for such ways and measures as the Board may think best in the campaign against tuberculosis. Your secretary has changed his opinion considerably concerning the advisability of pressing the legislature at this time for a state sanatorium for the treatment of this disease. This necessarily means a large sum of money if proper and adequate provisions are made, and it is believed that the legislature is not now ready to make such a large appropriation, but that \$10,000 might be appropriated for an educational campaign, which in my judgment would be of more real value to the people along the lines of prevention than the establishment of a state institution. Moreover, after a two years' campaign has been made throughout the state, the people will demand of the next legislature an institution worthy of the name of this great and prosperous state.

Respectfully submitted. S. J. CRUMBINE, M. D., *Secretary*.

REPORT OF BACTERIOLOGIST.

Dr. S. J. Crumrine, Secretary of the Kansas State Board of Health:

DEAR DOCTOR—I herewith submit a report of the work which has been done in the bacteriological laboratory during the period beginning July 1, 1907, and ending March 31, 1909.

Total number of specimens examined, 2464.

Number of specimens examined during the year beginning July 1, 1907, 1212.

Specimens examined during this year were divided as follows:

Specimens of sputum, 765. Of this number 211 were positive.

Specimens from cases of suspected diphtheria, 804. Of this number 108 were positive.

Samples of water tested for the presence of the *Bacillus coli communis*, 71. Of this number 30 were positive.

Specimens of blood from cases of suspected typhoid fever, which were tested for the Widal reaction, 52. Of this number 20 gave the reaction.

Specimens from cases of suspected gonorrhœa, 19. Of this number 8 were positive.

The brain of one dog was examined for the *Negri* bodies, the organisms now thought to be the infective agents in rabies. This examination was positive.

Number of specimens examined from July 1, 1908, to March 31, 1909, 1255.

Specimens examined during this time were divided as follows:

Specimens of sputum, 712. Of this number 185 were positive.

Specimens from cases of suspected diphtheria, 370. Of this number 132 were positive.

Samples of water tested for the presence of the *Bacillus coli communis*, 70. Of this number 37 were positive.

Specimens of blood tested for the Widal reaction, 69. Of this number 21 were positive.

Specimens from cases of suspected gonorrhœa, 26. Of this number 18 were positive.

Six examinations were made for the *Negri* bodies, four of which were positive.

Two specimens were examined for the *Diplococcus intercellularis* (cerebral-spinal meningitis), both of which were positive.

Respectfully submitted.

SARA E. GREENFIELD, M. D., Bacteriologist.

FINANCIAL STATEMENT

FOR YEAR ENDING JUNE 30, 1907.

| FOR WHAT PURPOSE. | Amount appropriated. | Amount expended. | Unexpended balance. |
|-------------------------------------------------------------------------------------------------|----------------------|------------------|---------------------|
| Salary of secretary | \$1,200 00 | | |
| Salary of secretary, deficiency | 833 33 | \$1,671 55 | \$361 78 |
| Salary of stenographer | 600 00 | | |
| Salary of stenographer, deficiency | 240 00 | 639 36 | 200 64 |
| Sanitary work | 600 00 | 600 00 | |
| Salary of bacteriologist | 900 00 | | |
| Salary of bacteriologist, deficiency | 350 00 | 989 49 | 260 51 |
| Expenses of Board to carry out provisions of chapter 129, Laws of 1896, postage, etc. | 800 00 | 800 00 | |
| Emergency fund to carry out the provisions of chapter 74, Laws of 1893, balance from 1906. | 5,000 00 | | 5,000 00 |
| Salary of clerk and stenographer | 275 00 | 254 55 | 20 45 |
| Salary of stenographer | 210 00 | 203 64 | 6 36 |
| Salary of four food inspectors | 1,200 00 | 1,200 00 | |
| Traveling expenses of inspectors | 900 00 | | 56 90 |
| John A. Kleinhans | | 224 52 | |
| A. G. Pike | | 223 55 | |
| A. H. Roby | | 167 24 | |
| Harry Bell | | 212 79 | |
| Deficiency expenses of members for June, 1906. | 42 71 | 42 71 | |
| Miscellaneous and incidental expenses | 500 00 | | |
| S. J. Crumbine, meetings, postage, etc. | | 132 01 | |
| Independent Telephone Company | | 9 00 | |
| Missouri & Kansas Telephone Company | | 15 75 | |
| E. H. S. Bailey | | 99 63 | |
| Remington Typewriter Company | | 80 00 | |
| L. E. Sayre | | 87 04 | |
| Crosby Bros. | | 47 00 | |
| Wells, Fargo & Company Express | | 8 97 | |
| F. O. Marvin | | 4 95 | |
| John A. Kleinhans | | 4 65 | |
| A. G. Pike | | 1 00 | |
| Totals | \$13,651 04 | \$7,744 40 | \$5,906 64 |

FINANCIAL STATEMENT.

FOR YEAR ENDING JUNE 30, 1908.

| FOR WHAT PURPOSE. | Amount appropriated. | Amount expended. | Unexpended balance. |
|----------------------------------------------------------------------------------------------------------|----------------------|------------------|---------------------|
| Salary of secretary..... | \$2,500 00 | \$2,500 00 | |
| Salary of clerk and stenographer..... | 900 00 | 900 00 | |
| Salary of stenographer..... | 720 00 | 720 00 | |
| Salary of bacteriologist..... | 1,200 00 | 1,200 00 | |
| Salary of four assistant food inspectors at \$1200 each..... | 4,800 00 | 4,750 00 | \$50 00 |
| Traveling expenses of inspectors..... | 8,600 00 | | |
| A. G. Pike..... | | 996 43 | |
| Harry Bell..... | | 821 84 | |
| J. F. Tilford..... | | 964 17 | |
| John Kleinhans..... | | 817 56 | |
| Miscellaneous and incidental expenses..... | 2,500 00 | | 29 |
| S. J. Crumline..... | | 856 86 | |
| A. G. Pike..... | | 62 90 | |
| Harry Bell..... | | 29 98 | |
| J. F. Tilford..... | | 153 20 | |
| John Kleinhans..... | | 47 23 | |
| E. H. S. Bailey..... | | 276 96 | |
| L. E. Sayre..... | | 76 23 | |
| J. T. Willard..... | | 41 12 | |
| William C. Hoad..... | | 44 05 | |
| Charles H. Lerrigo..... | | 87 25 | |
| W. A. Starin..... | | 19 91 | |
| W. A. Guenther..... | | 4 95 | |
| Adolph Hirsch..... | | 4 80 | |
| W. S. Amos..... | | 4 45 | |
| Charles D. Welch..... | | 11 50 | |
| Fred A. Snow..... | | 23 53 | |
| Ralph H. Wolfe..... | | 17 90 | |
| Adolph Zieffe..... | | 17 81 | |
| J. B. Carlile..... | | 5 00 | |
| Topeka Independent Telephone Company..... | | 85 00 | |
| Missouri & Kansas Telephone Company..... | | 41 75 | |
| J. C. Darling Company..... | | 10 75 | |
| Hall Stationery Company..... | | 96 98 | |
| Crosby Brothers Company..... | | 76 20 | |
| Mood Plumbing Company..... | | 40 80 | |
| Machinists Electric Company..... | | 1 20 | |
| Johnson & Beck..... | | 39 67 | |
| Henry Bennett..... | | 319 18 | |
| H. C. Lang..... | | 61 50 | |
| Equipment laboratory of hygiene..... | 500 00 | 500 00 | |
| Maintenance laboratory of hygiene..... | 500 00 | 499 18 | 82 |
| Sanitary fund..... | 800 00 | 798 51 | 1 49 |
| Expenses of board and to carry out provisions of chapter 129, Laws of 1896, postage and incidentals..... | 800 00 | | 8 74 |
| S. J. Crumline, meetings, postage, etc..... | | 102 09 | |
| J. B. Carver..... | | 81 18 | |
| C. D. Welch..... | | 104 72 | |
| H. M. Bentley..... | | 79 63 | |
| J. B. Carlile..... | | 62 12 | |
| Clay E. Coburn..... | | 23 04 | |
| C. H. Lerrigo..... | | 30 00 | |
| A. B. Scott..... | | 117 00 | |
| F. O. Marvin..... | | 5 53 | |
| L. A. Golden..... | | 66 24 | |
| G. E. Locke..... | | 15 45 | |
| B. J. Alexander..... | | 11 25 | |
| Charles H. Huffman..... | | 23 60 | |
| L. E. Sayre..... | | 5 53 | |
| E. H. S. Bailey..... | | 31 28 | |
| J. T. Willard..... | | 9 21 | |
| W. C. Hoad..... | | 13 39 | |
| Emergency fund to carry out provisions of chapter 74, Laws of 1898..... | 5,000 00 | | 5,000 00 |
| Totals..... | \$23,820 00 | \$18,763 66 | \$5,056 34 |

VITAL STATISTICS.

COMPRISING RETURNS OF MARRIAGES, BIRTHS AND DEATHS,

ALSO

ANNUAL REPORTS OF COUNTY HEALTH OFFICERS.

(153)

REPORTS OF STATE INSTITUTIONS, 1907.

State Hospital, Osawatometie. Number of inmates, 1298. Number of deaths, 123, as follows: Dementia, 20; cardiac lesion, 10; apoplexy, 11; enteritis, 6; mania, 7; tuberculosis, 19; ophthalmic goiter, 1; pneumonia, 6; melancholia, 8; paresis, 7; dysentery, 4; pulmonary edema, 1; septicemia, 3; arteriosclerosis, 1; peritonitis, 3; multiple sclerosis, 1; hemorrhage of bowels, 1; meningitis, 1; chronic nephritis, 3; epilepsy, 2; suicide, 2; erysipelas, 1; cerebral hemorrhage, 5.—L. L. UHLS, M. D., *Superintendent*.

State Hospital, Topeka. Number of inmates, 1090. Number of deaths, 46, as follows: Paresis, 13; acute mania, 2; senile dementia, 17; uremia, 1; pneumonia, 2; suicide, 1; peritonitis, 1; organic heart disease, 1; chronic nephritis, 2; cerebral hemorrhage, 1; intestinal obstruction, 1; carcinoma uterus, 1; strangulated hernia, 1; melancholia, 2.—T. C. BIDDLE, M. D., *Superintendent*.

State Hospital for Epileptics, Parsons. Number of inmates, 375. Number of deaths, 34, as follows: Acute enteritis, 1; chronic enteritis, 3; apoplexy, 2; epileptic seizure, 5; erysipelas, 1; epileptic exhaustion, 5; status epilepticus, 4; pneumonia lobar, 1; pneumonia lobular, 1; intestinal obstruction, 1; pulmonary tuberculosis, 4; typhoid fever, 1; pyemia, 1; organic heart disease, 1; paresis, 2; cerebral concussion, 1.—M. L. PERRY, M. D., *Superintendent*.

State Industrial Reformatory, Hutchinson. Number of inmates, 350. Number of deaths, 4, as follows: Typhoid fever, 1; suicide, 1; consumption, 1; pneumonia, 1.—J. E. FOLTZ, M. D., *Superintendent*.

Boys' Industrial School, Topeka. Number of inmates, —. Number of deaths, 1, from tuberculosis.—H. W. CHARLES, *Superintendent*.

Girls' Industrial School, Beloit. Number of inmates, 185. Number of deaths, none.—JULIA B. PERRY, *Superintendent*.

State School for Feeble-minded Youth, Winfield. Number of inmates, 390. Number of deaths, 12, as follows: Epileptic exhaustion, 3; pneumonia, 1; pulmonary tuberculosis, 2; cholera infantum, 1; typhoid fever (intestinal perforation), 1; hydrocephalus, 1; Bright's disease, 1; eclampsia, 2.—F. C. CAVE, M. D., *Assistant Superintendent*.

State School for the Deaf and Dumb, Olaths. Number of inmates, 240. Number of deaths, none.—H. C. HAMMOND, *Superintendent*.

Post Hospital, Fort Leavenworth. Number of inmates, 120. Number of deaths, none.—E. C. CARTER, M. D., *U. S. Surgeon*.

Total number of deaths occurring in the state institutions during the year, 220, of which 27 were from tuberculosis, 4 from dysentery and 3 from typhoid fever. There were 68 cases of dysentery reported during the year, 44 cases of consumption, 1 case of diphtheria, 1 of scarlet fever, 109 cases of measles and 12 of typhoid fever.

REPORTS OF STATE INSTITUTIONS, 1908.

State Hospital, Osawatimie. Number of inmates, 1312. Number of deaths, 149, as follows: Endocarditis, 1; senile dementia, 28; tuberculosis, 28; cancer, 1; apoplexy, 5; mania, 14; enteritis, 12; melancholia, 8; nephritis, 4; valvular heart lesion, 7; erysipelas, 2; paresis, 13; pneumonia, 6; cerebral hemorrhage, 6; epilepsy, 4; paralysis, 1; multiple sclerosis, 1; Bright's disease, 1; measles, 1; dysentery, 4; locomotor ataxia, 1; intestinal obstruction, 1; icterus, 1; peritonitis, 1.—L. L. UHLS, M. D., *Superintendent*.

State Hospital, Topeka. Number of inmates, 1118. Number of deaths, 69, as follows: Senile dementia, 19; tuberculosis, 11; general paresis, 10; pneumonia, 2; chronic nephritis, 4; septicemia, 1; cerebral embolism, 1; acute pancreatitis, 1; cerebral abscess, 1; organic heart disease, 6; carcinoma rectum, 1; hyperacute mania, 1; suicide, 1; uremia, 1; drowned, 1; cerebrospinal lues, 1; cerebral hemorrhage, 3; strangulated hernia, 1; peritonitis, 1; exhaustion from fracture, 1; malaria (pernicious), 1.—T. C. BIDDLE, M. D., *Superintendent*.

State Hospital for Epileptics, Parsons. Number of inmates, 426. Number of deaths, 27, as follows: Exhaustion, 6; bronchopneumonia, 3; lobar pneumonia, 1; epileptic seizure, 1; pulmonary tuberculosis, 1; status epilepticus, 3; organic heart disease, 3; pleurisy with effusion, 1; pyemia, 1; apoplexy, 1; skull fracture, 1; pulmonary edema, 1; cancer of breast, 1; thrombosis, 1; cerebral softening, 2.—M. L. PERRY, M. D., *Superintendent*.

State Soldiers' Home, Fort Dodge. Number of inmates, 630. Number of deaths, 26, as follows: Valvular disease of heart, 4; carcinoma uterus, 1; tuberculosis, 1; paralysis, 2; chronic bronchitis, 2; acute indigestion, 1; senility, 1; cancer of liver, 1; heart failure, 3; cholera morbus, 2; scrofula, 1; nephritis, 1; hemiplegia, 1; softening of brain, 1; syphilis, 1; chronic gastritis, 1; apoplexy, 1; gastric ulcer, 1.—A. A. RAUB, M. D., *Superintendent*.

State Penitentiary, Lansing. Number of inmates, 1347. Number of deaths, 11, as follows: Tuberculosis, 7; endocarditis, 1; pneumonia, 1; cancer, 1.—SHERMAN L. AXFORD, M. D.

State School for the Deaf, Olathe. Number of inmates, 240. No death.—H. C. HAMMOND, *Superintendent*.

Girls' Industrial School, Beloit. Number of inmates, 199. Number of deaths, none.—JULIA B. PERRY, *Superintendent*.

Boys' Industrial School, Topeka. Number of inmates, 221. Number of deaths, none.—H. W. CHARLES, M. D., *Superintendent*.

State School for the Blind, Kansas City. Number of inmates, 93. Number of deaths, 1, from nervous trouble.—W. B. HALL, *Superintendent*.

Total number of deaths occurring in the state institutions during the year, 283, of which 42 were from tuberculosis, 4 from dysentery and 1 from measles. There were 17 cases of dysentery reported, 97 cases of tuberculosis and 14 cases of measles.

TABLE No. 1.—ASSESSORS' RETURNS OF VITAL STATISTICS FOR THE YEAR
ENDING MARCH 1, 1907.

| COUNTIES. | MARRIAGES. | | | BIRTHS. | | | | | DEATHS. | | | | |
|-------------|------------|----------|------------|-----------|---------|-----------|----------|------------|-----------|---------|-----------|----------|------------|
| | Number... | White... | Colored... | Number... | Male... | Female... | White... | Colored... | Number... | Male... | Female... | White... | Colored... |
| Allen | 224 | 217 | 7 | 555 | 304 | 251 | 542 | 13 | 162 | 102 | 60 | 161 | 1 |
| Anderson | 100 | 100 | ... | 248 | 123 | 125 | 243 | ... | 107 | 61 | 46 | 107 | ... |
| Atchison | 385 | 325 | 10 | 400 | 208 | 192 | 398 | 12 | 313 | 155 | 158 | 261 | 52 |
| Barber | 45 | 44 | 1 | 127 | 61 | 66 | 127 | ... | 38 | 22 | 16 | 38 | ... |
| Barton | 119 | 118 | 1 | 362 | 188 | 174 | 354 | 8 | 91 | 51 | 40 | 88 | 3 |
| Bourbon | 50 | 50 | ... | 106 | 58 | 48 | 106 | ... | 33 | 16 | 17 | 31 | 2 |
| Brown | 105 | 102 | 3 | 359 | 175 | 184 | 347 | 12 | 122 | 61 | 61 | 116 | 6 |
| Butler | 112 | 112 | ... | 331 | 158 | 173 | 331 | ... | 124 | 64 | 60 | 124 | ... |
| Chase | 49 | 49 | ... | 185 | 62 | 73 | 182 | 3 | 70 | 45 | 25 | 67 | 3 |
| Chautauqua | 79 | 79 | ... | 240 | 125 | 115 | 239 | 1 | 80 | 45 | 35 | 78 | 2 |
| Cherokee | 246 | 241 | 5 | 645 | 308 | 337 | 623 | 22 | 275 | 139 | 136 | 270 | 5 |
| Cheyenne | 35 | 35 | ... | 77 | 43 | 34 | 77 | ... | 27 | 19 | 8 | 27 | ... |
| Clark | 34 | 34 | ... | 86 | 16 | 20 | 86 | ... | 15 | 9 | 6 | 15 | ... |
| Clay | 99 | 98 | 1 | 270 | 146 | 124 | 269 | 1 | 108 | 66 | 37 | 101 | 2 |
| Cloud | 112 | 112 | ... | 349 | 174 | 175 | 343 | 1 | 108 | 52 | 56 | 108 | ... |
| Coffey | 124 | 124 | ... | 308 | 170 | 133 | 302 | 1 | 104 | 54 | 50 | 102 | 2 |
| Comanche | 16 | 16 | ... | 40 | 19 | 21 | 40 | ... | 12 | 3 | 9 | 12 | ... |
| Cowley | 232 | 230 | 2 | 463 | 253 | 215 | 464 | 4 | 206 | 105 | 101 | 203 | 3 |
| Crawford | 150 | 150 | ... | 474 | 233 | 241 | 472 | 2 | 127 | 75 | 52 | 123 | 4 |
| Decatur | 52 | 52 | ... | 202 | 98 | 104 | 202 | ... | 44 | 28 | 16 | 44 | ... |
| Dickinson | 182 | 180 | 2 | 394 | 211 | 183 | 393 | 1 | 163 | 90 | 73 | 162 | 1 |
| Doniphan | 73 | 76 | 2 | 252 | 125 | 127 | 241 | 11 | 90 | 47 | 43 | 84 | 6 |
| Douglas | 123 | 120 | 3 | 282 | 117 | 145 | 243 | 14 | 86 | 39 | 47 | 85 | 1 |
| Edwards | 68 | 62 | 1 | 122 | 58 | 64 | 121 | 1 | 42 | 24 | 18 | 41 | 1 |
| Elk | 88 | 88 | ... | 305 | 100 | 105 | 295 | ... | 67 | 38 | 29 | 67 | ... |
| Ellis | 52 | 52 | ... | 237 | 143 | 139 | 236 | 1 | 57 | 27 | 30 | 57 | ... |
| Ellsworth | 68 | 68 | ... | 166 | 85 | 81 | 165 | 1 | 62 | 37 | 25 | 62 | ... |
| Finney | 25 | 25 | ... | 91 | 49 | 42 | 88 | 3 | 35 | 21 | 14 | 33 | 2 |
| Ford | 57 | 55 | 2 | 175 | 87 | 88 | 175 | ... | 62 | 34 | 28 | 60 | 2 |
| Franklin | 90 | 89 | 1 | 224 | 114 | 110 | 220 | 4 | 94 | 51 | 43 | 93 | 1 |
| Geary | 51 | 49 | 2 | 159 | 78 | 81 | 157 | 2 | 51 | 27 | 24 | 51 | ... |
| Gove | 31 | 30 | 1 | 117 | 68 | 49 | 117 | ... | 22 | 11 | 11 | 21 | 1 |
| Graham | 50 | 47 | 3 | 201 | 104 | 97 | 198 | 13 | 58 | 24 | 34 | 54 | 4 |
| Grant | 7 | 7 | ... | 10 | 5 | 5 | 10 | ... | 3 | 3 | 5 | 3 | ... |
| Gray | 12 | 12 | ... | 63 | 35 | 28 | 62 | 1 | 13 | 10 | 3 | 13 | ... |
| Greeley | 7 | 7 | ... | 22 | 16 | 6 | 22 | ... | 4 | ... | 4 | 4 | ... |
| Greenwood | 113 | 118 | ... | 266 | 125 | 141 | 266 | ... | 91 | 40 | 51 | 91 | ... |
| Hamilton | 19 | 19 | ... | 29 | 13 | 11 | 29 | ... | 16 | 10 | 6 | 16 | ... |
| Harper | 95 | 95 | ... | 226 | 111 | 115 | 226 | ... | 84 | 42 | 42 | 84 | ... |
| Harvey | 95 | 95 | ... | 256 | 135 | 121 | 254 | 2 | 85 | 43 | 42 | 83 | 2 |
| Haskell | 13 | 13 | ... | 19 | 9 | 10 | 19 | ... | 13 | 4 | 9 | 13 | ... |
| Hodgeman | 22 | 20 | 2 | 49 | 24 | 25 | 48 | 1 | 19 | 11 | 8 | 17 | 2 |
| Jackson | 62 | 61 | 1 | 202 | 115 | 87 | 199 | 3 | 77 | 43 | 34 | 77 | ... |
| Jefferson | 87 | 87 | ... | 226 | 109 | 117 | 223 | 3 | 88 | 50 | 38 | 88 | ... |
| Jewell | 140 | 140 | ... | 347 | 182 | 155 | 347 | ... | 89 | 53 | 36 | 89 | ... |
| Johnson | 67 | 64 | 3 | 143 | 73 | 70 | 145 | 3 | 80 | 59 | 21 | 78 | 2 |
| Kearny | 24 | 24 | ... | 50 | 33 | 17 | 50 | ... | 16 | 4 | 12 | 16 | ... |
| Kingman | 87 | 87 | ... | 199 | 89 | 110 | 198 | 1 | 58 | 26 | 32 | 58 | ... |
| Kiowa | 36 | 36 | ... | 116 | 55 | 61 | 116 | ... | 25 | 13 | 12 | 25 | ... |
| Labette | 152 | 147 | 5 | 367 | 194 | 173 | 353 | 14 | 199 | 107 | 92 | 180 | 19 |
| Lane | 7 | 7 | ... | 66 | 28 | 38 | 66 | ... | 13 | 9 | 4 | 13 | ... |
| Leavenworth | 179 | 170 | 9 | 344 | 166 | 178 | 321 | 23 | 210 | 131 | 79 | 177 | 33 |
| Lincoln | 94 | 94 | ... | 265 | 144 | 121 | 263 | 2 | 64 | 26 | 39 | 61 | 3 |
| Linn | 122 | 122 | ... | 247 | 126 | 121 | 244 | 3 | 102 | 55 | 47 | 97 | 5 |
| Logan | 15 | 15 | ... | 78 | 41 | 37 | 72 | 6 | 26 | 16 | 10 | 26 | ... |
| Lyon | 150 | 143 | 7 | 356 | 173 | 183 | 340 | 16 | 119 | 63 | 56 | 116 | 3 |
| Marion | 169 | 169 | ... | 424 | 201 | 223 | 424 | ... | 144 | 82 | 62 | 144 | ... |
| Marshall | 174 | 173 | 1 | 465 | 232 | 233 | 462 | 3 | 149 | 92 | 57 | 149 | ... |
| McPherson | 127 | 127 | ... | 342 | 179 | 163 | 342 | ... | 113 | 63 | 55 | 113 | ... |
| Meade | 20 | 20 | ... | 74 | 35 | 39 | 74 | ... | 20 | 9 | 11 | 20 | ... |

TABLE No. 1—CONCLUDED.

| COUNTIES. | MARRIAGES. | | | BIRTHS. | | | | | DEATHS. | | | | |
|--------------|------------|--------|----------|---------|--------|---------|--------|----------|---------|-------|---------|--------|----------|
| | Number. | White. | Colored. | Number. | Male. | Female. | White. | Colored. | Number. | Male. | Female. | White. | Colored. |
| Miami | 116 | 114 | 2 | 300 | 146 | 154 | 295 | 5 | 100 | 58 | 42 | 92 | 8 |
| Mitchell | 92 | 92 | 0 | 261 | 135 | 126 | 261 | 0 | 91 | 55 | 36 | 91 | 0 |
| Montgomery | 200 | 195 | 5 | 694 | 363 | 331 | 669 | 25 | 213 | 124 | 89 | 206 | 7 |
| Morris | 135 | 134 | 1 | 184 | 86 | 98 | 182 | 2 | 48 | 27 | 21 | 48 | 0 |
| Morton | 1 | 1 | 0 | 8 | 4 | 4 | 8 | 0 | 8 | 8 | 0 | 8 | 0 |
| Nemaha | 84 | 83 | 1 | 298 | 172 | 126 | 295 | 3 | 85 | 48 | 37 | 83 | 2 |
| Neosho | 179 | 179 | 0 | 436 | 211 | 225 | 432 | 4 | 127 | 69 | 58 | 127 | 0 |
| Ness | 18 | 18 | 0 | 108 | 39 | 69 | 108 | 0 | 17 | 10 | 7 | 17 | 0 |
| Norton | 66 | 66 | 0 | 145 | 76 | 69 | 145 | 0 | 47 | 25 | 22 | 47 | 0 |
| Osage | 105 | 104 | 1 | 319 | 168 | 151 | 316 | 3 | 109 | 65 | 44 | 108 | 1 |
| Osborne | 82 | 82 | 0 | 271 | 140 | 131 | 270 | 1 | 78 | 34 | 44 | 78 | 0 |
| Ottawa | 82 | 82 | 0 | 229 | 108 | 121 | 229 | 0 | 61 | 36 | 25 | 61 | 0 |
| Pawnee | 58 | 58 | 0 | 168 | 91 | 77 | 167 | 1 | 60 | 23 | 37 | 50 | 0 |
| Phillips | 115 | 115 | 0 | 299 | 201 | 98 | 299 | 0 | 84 | 45 | 39 | 82 | 2 |
| Pottawatomie | 94 | 94 | 0 | 283 | 138 | 155 | 292 | 1 | 64 | 32 | 32 | 64 | 0 |
| Pratt | 73 | 71 | 2 | 109 | 59 | 50 | 109 | 0 | 45 | 24 | 21 | 45 | 0 |
| Rawlins | 232 | 278 | 4 | 659 | 332 | 327 | 653 | 6 | 212 | 117 | 95 | 207 | 5 |
| Reno | 118 | 118 | 0 | 378 | 185 | 193 | 378 | 0 | 95 | 50 | 45 | 95 | 0 |
| Republic | 111 | 109 | 2 | 266 | 135 | 131 | 263 | 3 | 78 | 43 | 35 | 77 | 1 |
| Riley | 65 | 65 | 0 | 228 | 122 | 106 | 226 | 2 | 70 | 35 | 35 | 69 | 1 |
| Rooks | 87 | 87 | 0 | 286 | 122 | 114 | 285 | 1 | 43 | 21 | 22 | 48 | 1 |
| Rush | 58 | 58 | 0 | 174 | 84 | 90 | 174 | 0 | 36 | 21 | 15 | 36 | 0 |
| Russell | 70 | 70 | 0 | 196 | 101 | 95 | 196 | 0 | 51 | 16 | 35 | 51 | 0 |
| Saline | 101 | 100 | 1 | 311 | 160 | 151 | 308 | 3 | 99 | 60 | 39 | 98 | 1 |
| Scott | 23 | 23 | 0 | 76 | 36 | 40 | 76 | 0 | 13 | 7 | 6 | 13 | 0 |
| Sedgwick | 358 | 346 | 12 | 818 | 431 | 387 | 804 | 14 | 349 | 219 | 130 | 341 | 8 |
| Seward | 8 | 8 | 0 | 24 | 15 | 9 | 24 | 0 | 4 | 2 | 2 | 4 | 0 |
| Shawnee | 337 | 318 | 19 | 876 | 450 | 426 | 825 | 51 | 324 | 175 | 149 | 296 | 28 |
| Sheridan | 84 | 84 | 0 | 147 | 77 | 70 | 147 | 0 | 27 | 12 | 15 | 27 | 0 |
| Sherman | 57 | 57 | 0 | 105 | 58 | 47 | 105 | 0 | 31 | 18 | 13 | 31 | 0 |
| Smith | 112 | 112 | 0 | 332 | 167 | 165 | 332 | 0 | 99 | 45 | 54 | 99 | 0 |
| Stafford | 67 | 67 | 0 | 235 | 113 | 122 | 235 | 0 | 50 | 19 | 31 | 50 | 0 |
| Stanton | 5 | 5 | 0 | 16 | 11 | 5 | 16 | 0 | 4 | 3 | 1 | 4 | 0 |
| Stevens | 14 | 14 | 0 | 28 | 16 | 12 | 27 | 1 | 9 | 3 | 6 | 7 | 2 |
| Sumner | 360 | 359 | 1 | 383 | 190 | 193 | 381 | 2 | 118 | 60 | 58 | 115 | 3 |
| Thomas | 48 | 48 | 0 | 127 | 59 | 68 | 127 | 0 | 36 | 19 | 17 | 36 | 0 |
| Trego | 20 | 20 | 0 | 99 | 46 | 53 | 99 | 0 | 23 | 13 | 10 | 23 | 0 |
| Wabaunsee | 71 | 71 | 0 | 221 | 121 | 100 | 205 | 16 | 66 | 35 | 31 | 61 | 5 |
| Wallace | 11 | 11 | 0 | 43 | 25 | 18 | 43 | 0 | 13 | 7 | 6 | 13 | 0 |
| Washington | 125 | 125 | 0 | 348 | 185 | 163 | 348 | 0 | 101 | 62 | 39 | 101 | 0 |
| Wichita | 4 | 4 | 0 | 45 | 23 | 17 | 45 | 0 | 5 | 3 | 2 | 5 | 0 |
| Wilson | 127 | 127 | 0 | 391 | 198 | 205 | 391 | 0 | 79 | 34 | 45 | 78 | 1 |
| Woodson | 50 | 50 | 0 | 175 | 96 | 89 | 175 | 0 | 58 | 32 | 26 | 57 | 1 |
| Wyandotte | 421 | 374 | 47 | 1,065 | 536 | 549 | 1,007 | 78 | 412 | 234 | 178 | 303 | 109 |
| Totals | 10,080 | 9,847 | 173 | 25,783 | 13,148 | 12,634 | 25,348 | 434 | 8,713 | 4,748 | 3,965 | 8,354 | 359 |

| COUNTIES. | MARRIAGES. | | | BIRTHS. | | | | | | DEATHS. | | | | |
|------------|------------|-----------|------------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|------------|--|
| | Number... | White.... | Colored... | Number... | Male..... | Female... | White.... | Colored... | Number... | Male..... | Female... | White.... | Colored... | |
| Allen | 181 | 127 | 4 | 882 | 204 | 178 | 372 | 10 | 125 | 74 | 51 | 118 | 7 | |
| Anderson | 101 | 99 | 3 | 214 | 100 | 114 | 213 | 1 | 114 | 50 | 55 | 112 | 2 | |
| Atchison | 121 | 110 | 11 | 264 | 131 | 133 | 240 | 24 | 92 | 48 | 44 | 82 | 10 | |
| Barber | 54 | 53 | 1 | 140 | 75 | 65 | 140 | 0 | 30 | 15 | 15 | 30 | 3 | |
| Barton | 100 | 100 | 0 | 372 | 196 | 176 | 368 | 4 | 76 | 48 | 28 | 72 | 4 | |
| Bourbon | 91 | 88 | 3 | 199 | 90 | 109 | 195 | 4 | 59 | 26 | 33 | 59 | 4 | |
| Brown | 132 | 128 | 4 | 361 | 194 | 167 | 353 | 8 | 116 | 66 | 50 | 112 | 4 | |
| Butler | 135 | 133 | 2 | 360 | 184 | 176 | 357 | 3 | 132 | 68 | 64 | 131 | 1 | |
| Chase | 37 | 37 | 0 | 101 | 49 | 52 | 99 | 2 | 20 | 12 | 8 | 19 | 1 | |
| Chautauqua | 85 | 85 | 0 | 240 | 136 | 104 | 240 | 0 | 70 | 41 | 29 | 68 | 2 | |
| Cherokee | 206 | 206 | 1 | 542 | 261 | 281 | 540 | 2 | 178 | 101 | 77 | 176 | 2 | |
| Cheyenne | 19 | 19 | 0 | 74 | 39 | 35 | 74 | 0 | 31 | 12 | 19 | 31 | 0 | |
| Clark | 44 | 44 | 0 | 68 | 31 | 37 | 68 | 0 | 15 | 10 | 5 | 15 | 0 | |
| Clay | 78 | 78 | 0 | 214 | 106 | 108 | 212 | 2 | 78 | 37 | 41 | 77 | 1 | |
| Cloud | 72 | 72 | ... | 263 | 140 | 123 | 263 | ... | 58 | 28 | 30 | 58 | ... | |
| Coffey | 121 | 121 | ... | 300 | 147 | 153 | 299 | 1 | 94 | 47 | 47 | 90 | 4 | |
| Comanche | 25 | 25 | 0 | 44 | 15 | 29 | 44 | 0 | 13 | 6 | 7 | 13 | 0 | |
| Cowley | 196 | 196 | 1 | 361 | 180 | 181 | 359 | 2 | 142 | 81 | 61 | 138 | 4 | |
| Crawford | 305 | 298 | 7 | 801 | 388 | 413 | 781 | 20 | 256 | 142 | 114 | 244 | 12 | |
| Decatur | 55 | 55 | 0 | 230 | 122 | 108 | 230 | 0 | 54 | 25 | 29 | 54 | 0 | |
| Dickinson | 109 | 109 | 0 | 400 | 209 | 191 | 399 | 1 | 111 | 67 | 44 | 111 | 0 | |
| Doniphan | 34 | 31 | 3 | 259 | 134 | 125 | 250 | 9 | 78 | 47 | 31 | 74 | 4 | |
| Douglas | 148 | 126 | 22 | 299 | 155 | 144 | 275 | 24 | 198 | 113 | 90 | 169 | 24 | |
| Edwards | 41 | 41 | 0 | 102 | 57 | 45 | 102 | 0 | 43 | 25 | 18 | 43 | 0 | |
| Elk | 60 | 60 | 0 | 157 | 72 | 85 | 157 | 0 | 57 | 32 | 25 | 57 | 0 | |
| Ellis | 86 | 86 | 0 | 276 | 156 | 120 | 276 | 0 | 82 | 41 | 41 | 82 | 0 | |
| Ellsworth | 57 | 57 | 0 | 218 | 115 | 103 | 218 | 0 | 52 | 29 | 23 | 52 | 0 | |
| Finney | 90 | 89 | 1 | 60 | 31 | 29 | 60 | 0 | 57 | 24 | 33 | 54 | 3 | |
| Ford | 44 | 44 | 0 | 206 | 103 | 103 | 206 | 0 | 77 | 46 | 31 | 77 | 0 | |
| Franklin | 103 | 102 | 1 | 209 | 106 | 103 | 205 | 4 | 71 | 30 | 41 | 70 | 1 | |
| Geary | 40 | 40 | 0 | 112 | 61 | 51 | 112 | 0 | 37 | 25 | 12 | 37 | 0 | |
| Gove | 20 | 20 | 0 | 112 | 52 | 60 | 112 | 0 | 14 | 7 | 7 | 14 | 0 | |
| Graham | | | | | | | | | | | | | | |
| Grant | 6 | 6 | 0 | 31 | 16 | 15 | 31 | 0 | 5 | 4 | 1 | 5 | 0 | |
| Gray | 15 | 15 | 0 | 49 | 22 | 27 | 49 | 0 | 6 | 2 | 4 | 6 | 0 | |
| Greeley | 10 | 10 | 0 | 29 | 7 | 22 | 29 | 0 | 8 | 4 | 4 | 8 | 0 | |
| Greenwood | 96 | 96 | 0 | 318 | 144 | 169 | 312 | 1 | 66 | 32 | 33 | 66 | 0 | |
| Hamilton | 13 | 13 | 0 | 60 | 34 | 26 | 60 | 0 | 11 | 8 | 3 | 11 | 0 | |
| Harper | 88 | 88 | 0 | 227 | 113 | 114</ | | | | | | | | |

TABLE No. 2—CONCLUDED.

| COUNTIES. | MARRIAGES. | | | BIRTHS. | | | | | DEATHS. | | | | |
|-------------------|------------|-----------|-------------|-----------|-----------|------------|-----------|-------------|-----------|-----------|------------|-----------|-------------|
| | Number... | White.... | Colored.... | Number... | Male..... | Female.... | White.... | Colored.... | Number... | Male..... | Female.... | White.... | Colored.... |
| Miami..... | 135 | 131 | 4 | 274 | 141 | 133 | 272 | 2 | 129 | 68 | 61 | 122 | 7 |
| Mitchell..... | 82 | 82 | 0 | 255 | 135 | 120 | 255 | 0 | 60 | 30 | 30 | 60 | 0 |
| Montgomery..... | 160 | 158 | 2 | 409 | 213 | 196 | 405 | 4 | 125 | 76 | 49 | 123 | 2 |
| Morris..... | 144 | 143 | 1 | 152 | 73 | 79 | 152 | 0 | 55 | 34 | 21 | 52 | 3 |
| Morton..... | 17 | 17 | 0 | 36 | 18 | 18 | 35 | 1 | 5 | 2 | 3 | 5 | 0 |
| Nemaha..... | 95 | 95 | 0 | 336 | 174 | 162 | 333 | 3 | 96 | 57 | 39 | 96 | 0 |
| Neosho..... | 149 | 143 | 6 | 381 | 180 | 201 | 380 | 1 | 144 | 70 | 74 | 144 | 0 |
| Ness..... | 40 | 40 | 0 | 116 | 60 | 56 | 116 | 0 | 32 | 17 | 15 | 32 | 0 |
| Norton..... | 75 | 75 | 0 | 219 | 98 | 126 | 219 | 0 | 42 | 20 | 22 | 42 | 0 |
| Osage..... | 107 | 107 | 0 | 308 | 153 | 155 | 307 | 1 | 113 | 61 | 57 | 113 | 5 |
| Osborne..... | 98 | 98 | 0 | 252 | 122 | 130 | 252 | 0 | 66 | 34 | 32 | 66 | 0 |
| Ottawa..... | 67 | 66 | 1 | 215 | 119 | 96 | 215 | 0 | 64 | 34 | 30 | 63 | 1 |
| Pawnee..... | 41 | 39 | 2 | 140 | 84 | 56 | 140 | 0 | 33 | 19 | 19 | 33 | 0 |
| Phillips..... | 67 | 67 | 0 | 276 | 170 | 106 | 276 | 0 | 32 | 45 | 37 | 32 | 0 |
| Pottawatomie..... | 89 | 89 | 0 | 291 | 148 | 143 | 291 | 0 | 90 | 41 | 49 | 88 | 2 |
| Pratt..... | 56 | 54 | 2 | 123 | 63 | 65 | 123 | 0 | 30 | 15 | 15 | 29 | 1 |
| Rawlins..... | 32 | 32 | 0 | 119 | 59 | 60 | 119 | 0 | 22 | 11 | 11 | 22 | 0 |
| Reno..... | 201 | 200 | 1 | 566 | 290 | 276 | 561 | 5 | 138 | 70 | 68 | 138 | 0 |
| Republic..... | 102 | 102 | 0 | 313 | 150 | 163 | 313 | 0 | 39 | 43 | 56 | 39 | 0 |
| Rice..... | 97 | 97 | 0 | 245 | 114 | 131 | 241 | 4 | 31 | 44 | 47 | 31 | 0 |
| Riley..... | 84 | 83 | 1 | 232 | 115 | 117 | 231 | 1 | 68 | 45 | 23 | 68 | 0 |
| Rooks..... | 54 | 54 | 0 | 261 | 121 | 140 | 259 | 2 | 55 | 30 | 25 | 54 | 1 |
| Rush..... | 49 | 49 | 0 | 138 | 103 | 85 | 138 | 0 | 50 | 25 | 25 | 50 | 0 |
| Russell..... | 65 | 65 | 0 | 224 | 129 | 95 | 224 | 0 | 47 | 25 | 22 | 47 | 0 |
| Saline..... | 89 | 88 | 1 | 204 | 88 | 116 | 204 | 0 | 32 | 50 | 42 | 32 | 0 |
| Scott..... | 22 | 22 | 0 | 108 | 50 | 58 | 108 | 0 | 16 | 9 | 7 | 16 | 0 |
| Sedgwick..... | 267 | 259 | 8 | 789 | 374 | 415 | 780 | 9 | 256 | 147 | 109 | 252 | 4 |
| Seward..... | 11 | 11 | 0 | 31 | 19 | 13 | 31 | 0 | 6 | 4 | 2 | 6 | 0 |
| Shawnee..... | 394 | 364 | 30 | 755 | 407 | 348 | 701 | 54 | 344 | 189 | 155 | 299 | 45 |
| Sheridan..... | 31 | 31 | 0 | 153 | 85 | 68 | 153 | 0 | 30 | 15 | 15 | 30 | 0 |
| Sherman..... | 35 | 35 | 0 | 104 | 53 | 51 | 104 | 0 | 31 | 13 | 13 | 31 | 0 |
| Smith..... | 82 | 82 | 0 | 366 | 174 | 192 | 366 | 0 | 91 | 46 | 45 | 91 | 0 |
| Stafford..... | 89 | 89 | 0 | 237 | 129 | 108 | 235 | 2 | 57 | 34 | 23 | 56 | 1 |
| Stanton..... | 7 | 7 | 0 | 29 | 16 | 13 | 29 | 0 | 8 | 2 | 6 | 8 | 0 |
| Stevens..... | 9 | 9 | 0 | 34 | 43 | 41 | 33 | 1 | 9 | 6 | 3 | 8 | 1 |
| Sumner..... | 117 | 116 | 1 | 404 | 194 | 210 | 400 | 4 | 116 | 70 | 46 | 114 | 2 |
| Thomas..... | 46 | 46 | 0 | 132 | 56 | 76 | 132 | 0 | 36 | 18 | 18 | 36 | 0 |
| Trego..... | 35 | 35 | 0 | 108 | 61 | 47 | 108 | 0 | 40 | 21 | 19 | 40 | 0 |
| Wabawnee..... | 64 | 62 | 2 | 249 | 125 | 124 | 236 | 13 | 33 | 54 | 29 | 78 | 5 |
| Wallace..... | 12 | 12 | 0 | 45 | 31 | 14 | 45 | 0 | 7 | 6 | 1 | 7 | 0 |
| Washington..... | 90 | 90 | 0 | 321 | 153 | 168 | 321 | 0 | 115 | 53 | 62 | 115 | 0 |
| Wichita..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Wilson..... | 115 | 114 | 1 | 372 | 205 | 167 | 370 | 2 | 92 | 46 | 46 | 92 | 0 |
| Woodson..... | 58 | 58 | 0 | 124 | 63 | 61 | 124 | 0 | 49 | 24 | 25 | 49 | 0 |
| Wyandotta..... | 378 | 350 | 28 | 1,137 | 557 | 580 | 1,050 | 87 | 337 | 215 | 172 | 341 | 46 |
| Totals..... | 9,096 | 8,985 | 163 | 25,162 | 12,778 | 12,384 | 24,776 | 386 | 8,090 | 4,379 | 3,711 | 7,793 | 297 |

TABLE No. 3.—SYNOPSIS OF REPORTS

| COUNTIES. | Popula- tion. | Health officer. | Address. | COMMUNICABLE | | | | | |
|-------------------|---------------------|-------------------------|-----------------------|------------------|-----------|-------------------|-----------|----------------|-----------|
| | | | | Diph- theria. | | Scarlet fever. | | Small- pox. | |
| | | | | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| | State, 1,651,331 | | | | | | | | |
| Allen | 30,677 | R. O. Christian, M. D. | Iola | 10 | 3 | 40 | 9 | 100 | 0 |
| Anderson | 12,743 | D. M. Craig, M. D. | Garnett | 5 | 1 | 8 | 0 | 0 | 0 |
| Atchison | 30,026 | E. B. Kierr, M. D. | Atchison | 31 | 6 | 2 | 0 | 98 | 0 |
| Barber | 6,806 | J. H. Donovan, M. D. | Medicine Lodge | 1 | 1 | 28 | 1 | 0 | 0 |
| Barton | 15,929 | E. C. Button, M. D. | Great Bend | 7 | 3 | 1 | 0 | 18 | 0 |
| Bourbon | 26,728 | R. Aikman, M. D. | Fort Scott | 5 | 3 | 13 | 1 | 8 | 0 |
| Brown | 20,231 | W. W. Nye, M. D. | Hiawatha | 3 | 3 | 0 | 0 | 4 | 0 |
| Butler | 22,912 | C. E. Hunt, M. D. | El Dorado | 11 | 3 | 26 | 6 | 18 | 0 |
| Chase | 7,471 | Jacob Hinden, M. D. | Strong City | 2 | 0 | 14 | 1 | 51 | 0 |
| Chautauqua | 11,979 | B. E. Garrison, M. D. | Sedan | 13 | 2 | 11 | 1 | 2 | 0 |
| Cherokee | 39,369 | Chas. S. Huffman, M. D. | Columbus | 20 | 7 | 21 | 0 | 1 | 0 |
| Cheyenne | 3,586 | G. R. Pegg, M. D. | Bird City | 0 | 0 | 0 | 0 | 5 | 0 |
| Clark | 2,433 | W. F. Taylor, M. D. | Ashland | 0 | 0 | 12 | 3 | 70 | 0 |
| Clay | 15,301 | Sam E. Reynolds, M. D. | Clay Center | 4 | 0 | 2 | 0 | 17 | 0 |
| Cloud | 13,245 | A. B. Marcotte, M. D. | Concordia | 8 | 1 | 0 | 0 | 8 | 0 |
| Coffey | 15,816 | V. McMullen, M. D. | Burlington | 10 | 2 | 11 | 1 | 10 | 0 |
| Comanche | 2,086 | J. S. Halliday, M. D. | Coldwater | 0 | 0 | 30 | 4 | 0 | 0 |
| Cowley | 33,097 | D. F. Coffey, M. D. | Winfield | 17 | 1 | 6 | 3 | 56 | 0 |
| Crawford | 52,817 | G. E. Cole, M. D. | Girard | 10 | 6 | 17 | 0 | 0 | 0 |
| Decatur | 10,773 | Selden Miner, M. D. | Oberlin | 0 | 0 | 2 | 0 | 2 | 0 |
| Dickinson | 24,373 | T. R. Conklin, M. D. | Abilene | 24 | 3 | 7 | 0 | 52 | 0 |
| Doniphan | 13,825 | R. R. Clutz, M. D. | Bendena | 4 | 1 | 3 | 0 | 10 | 0 |
| Douglas | 25,403 | John C. Rudolph, M. D. | Lawrence | 48 | 9 | 20 | 2 | 14 | 0 |
| Edwards | 6,237 | M. De Tar, M. D. | Kinsley | 2 | 1 | 13 | 1 | 12 | 0 |
| Elk | 10,202 | G. H. Grinnell, M. D. | Howard | 24 | 4 | 7 | 0 | 11 | 0 |
| Ellis | 11,073 | J. N. Catudal, M. D. | Hays | 2 | 1 | 32 | 0 | 1 | 0 |
| Ellsworth | 9,563 | Alfred O'Donnell, M. D. | Ellsworth | 3 | 3 | 1 | 1 | 0 | 0 |
| Finney | 7,054 | Andrew Sabine, M. D. | Garden City | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford | 10,287 | H. Whitworth, M. D. | Dodge City | 2 | 0 | 15 | 0 | 8 | 0 |
| Franklin | 20,980 | W. L. Jacobus, M. D. | Ottawa | 5 | 1 | 7 | 0 | 5 | 0 |
| Geary | 10,523 | L. R. King, M. D. | Junction City | 17 | 1 | 0 | 0 | 0 | 0 |
| Gove | 4,699 | J. H. McNaughton, M. D. | Gove | 2 | 0 | 7 | 0 | 5 | 0 |
| Graham | 7,450 | J. A. Bundy, M. D. | Hill City | 4 | 2 | 0 | 0 | 8 | 0 |
| Grant | 866 | R. E. Buckmaster, M. D. | Ulysses | 0 | 0 | 0 | 0 | 10 | 1 |
| Gray | 2,833 | G. W. Hollembeak, M. D. | Cimarron | 0 | 0 | 3 | 0 | 0 | 0 |
| Greeley | 1,606 | J. W. Shepherd, M. D. | Tribune | 5 | 1 | 0 | 0 | 0 | 0 |
| Greenwood | 15,951 | W. S. Moonlight, M. D. | Eureka | 35 | 2 | 3 | 0 | 19 | 2 |
| Hamilton | 2,683 | R. M. Van Duzer, M. D. | Syracuse | 1 | 0 | 0 | 0 | 0 | 0 |
| Harper | 12,087 | A. D. Updegraff, M. D. | Anthony | 7 | 1 | 24 | 4 | 21 | 0 |
| Harvey | 17,093 | J. W. Graybill, M. D. | Newton | 3 | 1 | 15 | 1 | 16 | 0 |
| Haskell | 1,142 | L. V. Miner, M. D. | Santa Fe | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman | 2,855 | A. B. Ingels, M. D. | Jetmore | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson | 15,540 | E. W. Reed, M. D. | Holton | 0 | 0 | 0 | 0 | 16 | 0 |
| Jefferson | 15,504 | A. G. Smith, M. D. | Oskaloosa | 18 | 2 | 12 | 0 | 2 | 0 |
| Jewell | 18,095 | D. D. Allen, M. D. | Mankato | 3 | 1 | 15 | 0 | 0 | 0 |
| Johnson | 15,398 | H. H. Johnson, M. D. | Olathe | 1 | 0 | 0 | 0 | 0 | 0 |
| Kearny | 3,327 | G. F. Johnston, M. D. | Lakin | 3 | 2 | 11 | 1 | 20 | 0 |
| Kingman | 12,255 | M. H. Haskins, M. D. | Kingman | 22 | 0 | 5 | 0 | 2 | 0 |
| Kiowa | 3,948 | J. A. Gardner, M. D. | Greensburg | | | | | | |
| Labette | 35,398 | S. J. Dobson, M. D. | Edna | 3 | 0 | 0 | 0 | 11 | 0 |
| Lane | 2,740 | J. H. Morgan, M. D. | Dighton | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | 42,449 | G. R. Combs, M. D. | Leavenworth | 7 | 4 | 3 | 0 | 7 | 0 |
| Lincoln | 10,002 | J. Loughridge, M. D. | Lincoln | 6 | 1 | 4 | 2 | 2 | 0 |
| Linn | 15,069 | O. S. Chester, M. D. | Mound City | 65 | 7 | 3 | 0 | 4 | 0 |
| Logan | 3,780 | J. W. Smith, M. D. | Russell Springs | 0 | 0 | 1 | 0 | 0 | 0 |
| Lyon | 25,858 | J. M. Farrington, M. D. | Emporia | 19 | 3 | 33 | 0 | 7 | 0 |
| Marion | 21,196 | G. P. Marner, M. D. | Marion | 12 | 1 | 9 | 2 | 18 | 0 |
| Marshall | 23,551 | W. R. Breeding, M. D. | Marysville | 9 | 9 | 14 | 1 | 7 | 0 |

Fourth Biennial Report.

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FROM COUNTY HEALTH OFFICERS.

DISEASES, 1907.

| Measles. | | Typhoid fever. | | Chick-en-pox. | | Cholera infantum. | | Dysen-tery. | | Consump-tion. | | Total number of deaths from all causes..... | Total number of births..... | Total number of marriages..... | Salary of health officer..... | Expenses incurred by counties in controlling contagious diseases..... |
|----------|----------|----------------|----------|---------------|----------|-------------------|----------|-------------|----------|---------------|----------|---------------------------------------------|-----------------------------|--------------------------------|-------------------------------|-----------------------------------------------------------------------|
| Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | | | | | |
| 0 | 0 | 150 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 306 | 350 | 400 | \$224 00 | |
| 0 | 0 | 30 | 9 | 0 | 0 | 5 | 5 | 1 | 1 | 6 | 6 | 95 | 128 | | 300 00 | |
| 1 | 1 | 17 | 4 | 3 | 0 | 1 | 1 | 0 | 0 | 23 | 23 | 291 | 338 | 317 | 500 00 | \$1,214 50 |
| 0 | 0 | 6 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 26 | 71 | 62 | 120 00 | |
| 6 | 0 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 106 | 108 | 172 | 100 00 | |
| 91 | 0 | 12 | 6 | 2 | 0 | 2 | 0 | 1 | 0 | 21 | 21 | 256 | 178 | 299 | 120 00 | |
| 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 96 | 82 | 80 | 100 00 | |
| 195 | 1 | 19 | 6 | 0 | 0 | 9 | 9 | 0 | 0 | 8 | 6 | 177 | 206 | 177 | 100 00 | 25 00 |
| 15 | 0 | 18 | 1 | 0 | 0 | 21 | 6 | 6 | 0 | 5 | 2 | 44 | 68 | 40 | 50 00 | |
| 0 | 0 | 1 | 0 | 5 | 0 | 2 | 2 | 1 | 0 | 4 | 4 | 46 | | | Fees. | |
| 56 | 8 | 12 | 4 | 1 | 0 | 17 | 16 | 7 | 7 | 21 | 21 | 426 | 708 | 646 | 240 00 | 275 00 |
| 0 | 0 | 7 | 3 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 29 | 7 | | 165 00 | 240 00 |
| 1 | 0 | 8 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 22 | 47 | 27 | 30 00 | |
| 1 | 0 | 16 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 107 | 60 | 132 | Fees. | |
| 91 | 0 | 0 | 0 | 0 | 0 | 8 | 2 | 1 | 0 | 3 | 1 | 23 | 50 | | | 50 00 |
| 349 | 1 | 25 | 5 | 3 | 0 | 1 | 1 | 0 | 0 | 16 | 16 | 167 | 238 | 150 | 75 00 | |
| 0 | 0 | 4 | 0 | 10 | 0 | 1 | 1 | 10 | 0 | 2 | 2 | 30 | 60 | 21 | 250 00 | |
| 1 | 1 | 4 | 4 | 3 | 0 | 1 | 1 | 0 | 0 | 17 | 17 | 297 | 75 | | Fees. | |
| 3 | 2 | 24 | 16 | 1 | 0 | 10 | 10 | 2 | 2 | 32 | 31 | 574 | 373 | 506 | 300 00 | |
| 6 | 0 | 9 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 18 | 28 | 84 | 100 00 | |
| 10 | 0 | 37 | 5 | 0 | 0 | 2 | 2 | 2 | 2 | 16 | 7 | 176 | 338 | 216 | 400 00 | |
| 40 | 0 | 4 | 1 | 0 | 0 | 3 | 3 | 0 | 0 | 9 | 9 | 109 | 299 | 101 | 80 00 | 110 00 |
| 361 | 7 | 27 | 11 | 49 | 0 | 3 | 3 | 2 | 2 | 52 | 48 | 288 | 261 | | Fees. | |
| 0 | 0 | 10 | 0 | 5 | 0 | 0 | 0 | 14 | 2 | 4 | 4 | 47 | | 70 | 40 00 | |
| 30 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 45 | 100 | 77 | 75 00 | 175 00 |
| 73 | 1 | 12 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 126 | 393 | 92 | 50 00 | 108 00 |
| 2 | 2 | 3 | 0 | 12 | 0 | 2 | 2 | 0 | 0 | 5 | 5 | 103 | 215 | 80 | 90 00 | 140 00 |
| 386 | 1 | 100 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 77 | 24 | 67 | | |
| 0 | 0 | 8 | 1 | 1 | 0 | 7 | 5 | 2 | 1 | 9 | 9 | 93 | 174 | 105 | 100 00 | |
| 0 | 0 | 8 | 4 | 0 | 0 | 1 | 1 | 1 | 1 | 30 | 30 | 232 | 129 | 209 | 350 00 | |
| 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 5 | 5 | 4 | 4 | 119 | 137 | 167 | 100 00 | |
| 30 | 1 | 1 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 2 | 1 | 29 | 40 | 30 | | |
| 3 | 0 | 8 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 5 | 2 | 28 | 87 | 58 | 300 00 | |
| 30 | 1 | 3 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 10 | 20 | 7 | 100 00 | |
| 50 | 0 | 20 | 0 | 5 | 0 | 0 | 0 | 7 | 0 | 3 | 2 | 20 | 43 | 4 | 25 00 | |
| 6 | 0 | 45 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 30 | 20 | 500 00 | |
| 37 | 2 | 33 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 10 | 118 | 365 | 125 | Fees. | |
| 0 | 0 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 21 | 42 | 31 | 25 00 | |
| 10 | 0 | 3 | 2 | 4 | 0 | 0 | 0 | 7 | 7 | 13 | 13 | 98 | 89 | 98 | 100 00 | |
| 4 | 0 | 6 | 4 | 0 | 0 | 2 | 0 | 4 | 4 | 15 | 15 | 143 | 154 | 223 | 450 00 | |
| 14 | 0 | 5 | 1 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 5 | | |
| 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 1 | 24 | 59 | 13 | 150 00 | 100 00 |
| 3 | 0 | 3 | 2 | 5 | 0 | 2 | 2 | 0 | 0 | 8 | 8 | 106 | 164 | 135 | 500 00 | 25 00 |
| 50 | 1 | 10 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 65 | 150 | 86 | 500 00 | 700 00 |
| 30 | 0 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 7 | 7 | 73 | 208 | 74 | 50 00 | |
| 0 | 0 | 14 | 7 | 0 | 0 | 0 | 0 | 2 | 2 | 10 | 10 | 96 | 131 | | 60 00 | |
| 14 | 1 | 34 | 2 | 0 | 0 | 7 | 0 | 0 | 0 | 2 | 2 | 13 | 28 | 34 | 36 00 | |
| 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 29 | 36 | 125 | 100 00 | 100 00 |
| 1 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 68 | 77 | 40 | 44 00 | 21 50 |
| 11 | 0 | 13 | 2 | 0 | 0 | 1 | 1 | 10 | 4 | 1 | 0 | 17 | | | | |
| 9 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 96 | 89 | | 120 00 | 350 00 |
| 0 | 0 | 8 | 4 | 0 | 0 | 0 | 0 | 3 | 3 | 8 | 6 | 66 | 146 | 78 | 100 00 | |
| 0 | 0 | 5 | 3 | 5 | 0 | 0 | 0 | 1 | 1 | 7 | 4 | 46 | 35 | 80 | 100 00 | 512 50 |
| 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 19 | 17 | 16 | 400 00 | |
| 162 | 1 | 83 | 22 | 17 | 0 | 4 | 4 | 41 | 0 | 24 | 24 | 246 | 249 | 298 | 75 00 | |
| 4 | 0 | 9 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 1 | 71 | 194 | | 100 00 | 1,000 00 |
| 146 | 1 | 7 | 0 | 20 | 0 | 1 | 1 | 3 | 2 | 24 | 23 | 180 | 333 | 402 | Fees. | |

TABLE No. 3-

| COUNTIES. | Popula- tion. | Health officer. | Address. | COMMUNICABLES | | | | | |
|--------------------|------------------|-----------------------------|--------------------|------------------|-----------|-------------------|-----------|----------------|-----------|
| | | | | Diph- theria. | | Scarlet fever. | | Small- pox. | |
| | | | | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| McPherson | 20,966 | G. R. Dean, M. D. | McPherson | 12 | 1 | 2 | 0 | 2 | 1 |
| Meade | 3,430 | W. F. Fee, M. D. | Meade | 4 | 0 | 0 | 0 | 0 | 0 |
| Miami | 20,061 | J. H. Haldeman, M. D. | Paola | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell | 13,587 | M. J. Lobdell, M. D. | Beloit | 11 | 0 | 0 | 0 | 9 | 0 |
| Montgomery | 59,651 | G. C. Chaney, M. D. | Independence | 38 | 5 | 79 | 0 | 25 | 0 |
| Morris | 12,076 | W. E. Crawford, M. D. | Council Grove .. | 18 | 3 | 47 | 1 | 0 | 0 |
| Morton | 472 | Allan T. Coffman, M. D. | Richfield | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha | 20,023 | W. L. Carlyle, M. D. | Sabetha | 6 | 1 | 8 | 0 | 12 | 0 |
| Neosho | 22,458 | U. G. Hosham, M. D. | Chanute | 9 | 5 | 13 | 2 | 17 | 0 |
| Ness | 5,501 | C. Granville Egerton, M. D. | Ness City | 0 | 0 | 1 | 0 | 11 | 0 |
| Norton | 13,406 | J. T. Strickler, M. D. | Norton | 1 | 1 | 0 | 0 | 0 | 0 |
| Osage | 20,118 | R. H. Miles, M. D. | Lyndon | 9 | 4 | 1 | 0 | 30 | 0 |
| Osborne | 12,933 | A. C. Dillon, M. D. | Osborne | 11 | 1 | 20 | 0 | 32 | 0 |
| Ottawa | 11,052 | F. E. Harvey, M. D. | Minneapolis | 0 | 0 | 9 | 0 | 1 | 0 |
| Pawnee | 7,069 | J. B. Ingels, M. D. | Larned | 3 | 1 | 1 | 0 | 4 | 0 |
| Phillips | 15,011 | J. L. Shewmaker, M. D. | Phillipsburg | 30 | 3 | 2 | 0 | 62 | 0 |
| Pottawatomie | 16,467 | E. L. Simonton, M. D. | Wamego | 4 | 1 | 12 | 0 | 7 | 0 |
| Pratt | 3,025 | J. I. Douthart, M. D. | Pratt | 2 | 1 | 4 | 0 | 32 | 0 |
| Rawlins | 6,167 | L. G. Graves, M. D. | Atwood | 12 | 1 | 47 | 2 | 5 | 0 |
| Reno | 33,804 | F. A. Forney, M. D. | Hutchinson | 14 | 2 | 5 | 0 | 97 | 1 |
| Republic | 16,971 | J. S. Billingsley, M. D. | Belleville | 16 | 0 | 22 | 1 | 15 | 0 |
| Rice | 13,699 | C. J. Forney, M. D. | Lyons | 0 | 0 | 10 | 0 | 30 | 0 |
| Riley | 13,881 | J. D. Colt, M. D. | Manhattan | 21 | 1 | 20 | 1 | 18 | 0 |
| Rooks | 10,540 | W. B. Callender, M. D. | Stockton | 2 | 0 | 4 | 0 | 0 | 0 |
| Rush | 3,068 | W. H. Ferguson, M. D. | La Crosse | 13 | 3 | 2 | 2 | 0 | 0 |
| Russell | 9,101 | W. W. Bowlus, M. D. | Bunkerhill | 4 | 0 | 0 | 0 | 5 | 0 |
| Saline | 20,802 | N. D. Tobey, M. D. | Salina | 7 | 3 | 3 | 1 | 32 | 1 |
| Scott | 2,867 | S. Scott Myers, M. D. | Scott City | 0 | 0 | 0 | 0 | 0 | 0 |
| Sedgwick | 55,927 | G. W. Younkin, M. D. | Wichita | 11 | 4 | 6 | 2 | 17 | 1 |
| Seward | 3,018 | Geo. S. Smith, M. D. | Liberal | 0 | 0 | 0 | 0 | 5 | 0 |
| Shawnee | 59,108 | D. T. Nicoll, M. D. | Topeka | 39 | 5 | 11 | 0 | 32 | 0 |
| Sheridan | 5,702 | F. A. Hall, M. D. | Hoxie | 2 | 0 | 0 | 0 | 85 | 0 |
| Sherman | 5,062 | F. H. Smith, M. D. | Goodland | 0 | 0 | 0 | 0 | 98 | 0 |
| Smith | 16,590 | B. W. Slagle, M. D. | Smith Center | 10 | 0 | 1 | 1 | 0 | 0 |
| Stafford | 10,521 | J. P. H. Dykes, M. D. | Stafford | 4 | 2 | 3 | 0 | 14 | 0 |
| Stanton ① | 594 | | | | | | | | |
| Stevens | 1,549 | S. S. Holloway, M. D. | Hugoton | 1 | 0 | 0 | 0 | 1 | 0 |
| Sumner | 28,228 | L. F. Harmon, M. D. | Wellington | 65 | 8 | 61 | 4 | 21 | 0 |
| Thomas | 5,799 | Wm. M. Beaver, M. D. | Colby | 0 | 0 | 1 | 0 | 16 | 0 |
| Trego | 4,282 | Frank Lindsey, M. D. | Wa Keeney | 1 | 1 | 8 | 0 | 2 | 0 |
| Wabaunsee | 12,342 | G. W. B. Beverly, M. D. | Alma | 37 | 3 | 1 | 0 | 0 | 0 |
| Wallace | 2,219 | Frank Wilder | Sharon Springs .. | 8 | 3 | 0 | 0 | 0 | 0 |
| Washington | 20,018 | G. E. Tooley, M. D. | Washington | 6 | 2 | 7 | 0 | 4 | 0 |
| Wichita | 2,014 | O. E. Smith, M. D. | Leoti | 0 | 0 | 0 | 0 | 2 | 0 |
| Wilson | 19,566 | F. M. Wiley, M. D. | Fredonia | 4 | 0 | 5 | 0 | 13 | 0 |
| Woodson | 10,047 | H. W. West, M. D. | Yates Center | 4 | 2 | 2 | 0 | 0 | 0 |
| Wyandotte | 109,851 | L. D. Mabie, M. D. | Kansas City | 20 | 1 | 27 | 0 | 19 | 0 |
| <i>Cities.</i> | | | | | | | | | |
| Coffeyville | 17,406 | C. H. Fortner, M. D. | | 3 | 2 | 2 | 0 | 3 | 0 |
| Kansas City | 80,522 | E. J. Lutz, M. D. | | 129 | 21 | 51 | 1 | 29 | 0 |
| Leavenworth | 23,857 | J. F. Wallace, M. D. | | 49 | 0 | 12 | 0 | 21 | 0 |
| Topeka | 42,792 | M. R. Mitchell, M. D. | | 92 | 8 | 25 | 2 | 21 | 0 |
| Wichita | 36,898 | Martin Hagan, M. D. | | 19 | 2 | 38 | 3 | 262 | 2 |
| Totals | | | | 1,267 | 204 | 1,084 | 68 | 1,859 | 9 |

1. No health officer.

CONCLUDED.

DISEASES, 1907.

| Measles. | | Typhoid fever. | | Chick-en-pox. | | Cholera infantum. | | Dysen-tery. | | Consump-tion. | | Total number of deaths from all causes. | Total number of births. | Total number of marriages. | Salary of health officer. | Expenses incurred by nurses in controlling contagious diseases. |
|----------|----------|----------------|----------|---------------|----------|-------------------|----------|-------------|----------|---------------|----------|-----------------------------------------|-------------------------|----------------------------|---------------------------|-----------------------------------------------------------------|
| Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | | | | | |
| 0 | 0 | 32 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 89 | 69 | 187 | \$550 00 | |
| 13 | 0 | 15 | 2 | 0 | 0 | 0 | 0 | 12 | 0 | 1 | 0 | 17 | 56 | 41 | 100 00 | |
| 1 | 1 | 6 | 1 | 0 | 0 | 10 | 0 | 0 | 0 | 4 | 4 | 64 | 75 | 216 | 60 00 | |
| 8 | 0 | 27 | 8 | 5 | 0 | 0 | 2 | 4 | 2 | 9 | 6 | 120 | 259 | 186 | ① 100 00 | |
| 31 | 0 | 79 | 19 | 12 | 1 | 9 | 9 | 2 | 4 | 30 | 21 | 177 | 574 | 691 | 200 00 | \$631 00 |
| 25 | 0 | 27 | 4 | 19 | 0 | 32 | 4 | 9 | 0 | 14 | 7 | 103 | 216 | 135 | 100 00 | |
| 31 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 8 | 17 | 16 | 500 00 | |
| 576 | 1 | 19 | 8 | 14 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 231 | 530 | 141 | Fees. | |
| 7 | 0 | 9 | 7 | 0 | 0 | 2 | 2 | 3 | 3 | 6 | 6 | 132 | 190 | 150 | 200 00 | |
| 10 | 0 | 18 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 19 | 23 | 61 | 150 00 | 150 00 |
| 2 | 2 | 21 | 3 | 10 | 0 | 5 | 0 | 1 | 0 | 3 | 2 | 47 | 79 | 108 | 60 00 | |
| 5 | 0 | 4 | 4 | 0 | 0 | 3 | 3 | 0 | 0 | 17 | 17 | 228 | 190 | 141 | 50 & fees. | 129 37 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 9 | 9 | 106 | 96 | 108 | 100 00 | |
| 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 61 | 116 | 35 | 300 00 | |
| 300 | 2 | 15 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 4 | 3 | 46 | 110 | 76 | 52 00 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 3 | 88 | 218 | 112 | 150 00 | |
| 27 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 14 | 7 | 6 | 6 | 88 | 233 | 69 | 125 00 | |
| 40 | 0 | 20 | 4 | 31 | 0 | 1 | 1 | 18 | 0 | 12 | 4 | 60 | 85 | 108 | ① 50 00 | 500 00 |
| 14 | 0 | 19 | 3 | 5 | 0 | 2 | 2 | 3 | 1 | 5 | 3 | 68 | 121 | 61 | 40 & fees. | |
| 23 | 0 | 27 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 8 | 138 | 302 | 338 | 480 00 | |
| 30 | 3 | 6 | 6 | 0 | 0 | 5 | 5 | 0 | 0 | 9 | 9 | 145 | 274 | 136 | 500 00 | 250 00 |
| 72 | 0 | 17 | 3 | 10 | 0 | 37 | 7 | 0 | 0 | 0 | 0 | 10 | 94 | 94 | 50 00 | |
| 96 | 1 | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 6 | 96 | 107 | 101 | 95 00 | |
| 0 | 0 | 36 | 4 | 0 | 0 | 10 | 2 | 0 | 0 | 1 | 1 | 62 | 230 | 85 | 20 & fees. | 39 00 |
| 25 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 83 | 120 | 67 | 144 00 | |
| 8 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 46 | 63 | 86 | 100 00 | 130 00 |
| 76 | 0 | 8 | 2 | 4 | 0 | 6 | 6 | 0 | 0 | 10 | 9 | 196 | 237 | 201 | 125 00 | 200 00 |
| 35 | 0 | 1 | 0 | 25 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 26 | 60 | 28 | 25 00 | |
| 13 | 0 | 5 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 9 | 9 | 53 | 39 | 129 | 1,180 00 | |
| 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 15 | 52 | 75 | 50 00 | |
| 63 | 1 | 6 | 0 | 12 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 32 | 38 | | 500 00 | |
| 0 | 0 | 14 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 3 | 3 | 30 | 40 | 46 | 300 00 | |
| 38 | 0 | 36 | 8 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 52 | 78 | 49 | 200 00 | 1,200 00 |
| 0 | 0 | 8 | 8 | 0 | 0 | 10 | 10 | 8 | 8 | 8 | 8 | 141 | 135 | 132 | 40 00 | 70 00 |
| 1 | 0 | 15 | 8 | 6 | 0 | 13 | 5 | 27 | 8 | 6 | 6 | 84 | 208 | 106 | 100 00 | 350 00 |
| 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 28 | 14 | 80 00 | 45 00 |
| 5 | 0 | 12 | 1 | 3 | 0 | 6 | 2 | 4 | 1 | 20 | 19 | 122 | 150 | 195 | 100 00 | |
| 7 | 0 | 45 | 2 | 3 | 0 | 4 | 2 | 3 | 3 | 1 | 1 | 38 | 124 | 67 | 60 00 | 300 00 |
| 2 | 0 | 4 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 29 | 44 | 38 | 50 00 | |
| 56 | 1 | 3 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 4 | 4 | 84 | 117 | 99 | ① 200 00 | |
| 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 14 | 18 | 5 | 25 00 | |
| 41 | 3 | 18 | 5 | 2 | 0 | 4 | 4 | 1 | 1 | 12 | 7 | 194 | 232 | 129 | 80 00 | 141 75 |
| 0 | 0 | 6 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 2 | 12 | 33 | 10 | 125 00 | 145 00 |
| 430 | 3 | 15 | 3 | 0 | 0 | 3 | 3 | 0 | 0 | 13 | 4 | 95 | 151 | 159 | 20 00 | 290 00 |
| 0 | 0 | 11 | 3 | 0 | 0 | 4 | 3 | 2 | 2 | 15 | 9 | 103 | 141 | 110 | 50 00 | |
| 47 | 2 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 106 | 70 | | | 150 00 |
| 3 | 0 | 23 | 7 | 0 | 0 | 3 | 2 | 2 | 1 | 28 | 25 | 196 | 155 | | 360 00 | |
| 93 | 31 | 300 | 67 | 62 | 0 | 12 | 8 | 6 | 6 | 184 | 155 | 1,325 | 1,634 | 1,463 | | 3,610 00 |
| 110 | 0 | 30 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 31 | 31 | 345 | 371 | | 900 00 | |
| 462 | 3 | 23 | 14 | 18 | 0 | 1 | 1 | 3 | 3 | 54 | 50 | 625 | 430 | | 660 00 | 5,200 00 |
| 90 | 0 | 14 | 14 | 0 | 0 | 0 | 0 | 1 | 1 | 37 | 37 | 593 | | | | |
| 6,502 | 90 | 1,994 | 440 | 468 | 5 | 334 | 175 | 281 | 110 | 1,157 | 996 | 13,062 | 17,206 | 12,783 | \$17,280 00 | \$18,677 46 |

1. And mileage.

TABLE No. 4.—SYNOPSIS OF REPORTS

| COUNTIES. | Population. State, 1,656,799 | Health officer. | Address. | COMMUNICABLE | | | | | |
|------------------|----------------------------------------|-----------------------------|-----------------------|--------------|-----------|----------------|-----------|------------|-----------|
| | | | | Diphtheria. | | Scarlet fever. | | Small-pox. | |
| | | | | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| Allen..... | 28,238 | R. O. Christian, M. D..... | Iola..... | 16 | 8 | 30 | 1 | 65 | 0 |
| Anderson..... | 12,613 | T. A. Hood, M. D..... | Garnett..... | 3 | 3 | 2 | 0 | 12 | 0 |
| Atchison..... | 27,806 | J. C. Cole, M. D..... | Atchison..... | 6 | 1 | 5 | 1 | 38 | 0 |
| Barber..... | 7,614 | Hardin Gilbert, M. D..... | Medicine Lodge..... | 1 | 1 | 0 | 0 | 0 | 0 |
| Barton..... | 17,381 | E. C. Button, M. D..... | Great Bend..... | 2 | 1 | 3 | 2 | 21 | 0 |
| Bourbon..... | 26,479 | R. Aikman, M. D..... | Fort Scott..... | 14 | 2 | 11 | 0 | 47 | 1 |
| Brown..... | 20,320 | W. W. Nye, M. D..... | Hiawatha..... | 5 | 2 | 0 | 0 | 56 | 0 |
| Butler..... | 23,150 | R. S. Miller, M. D..... | El Dorado..... | 2 | 0 | 24 | 1 | 38 | 0 |
| Chase..... | 7,883 | F. T. Johnson, M. D..... | Cottonwood Falls..... | 1 | 1 | 11 | 1 | 15 | 0 |
| Chautauqua①..... | 11,204 | | | | | | | | |
| Cherokee..... | 38,929 | Chas. S. Huffman, M. D..... | Columbus..... | 52 | 16 | 17 | 3 | 84 | 1 |
| Cheyenne..... | 3,689 | E. R. Waterman, M. D..... | St. Francis..... | 10 | 2 | 40 | 7 | 10 | 0 |
| Clark..... | 2,963 | W. F. Taylor, M. D..... | Ashland..... | 0 | 0 | 2 | 1 | 0 | 0 |
| Clay..... | 15,146 | Sam E. Reynolds, M. D..... | Clay Center..... | 2 | 0 | 1 | 0 | 4 | 0 |
| Cloud..... | 17,492 | A. R. Marcotte, M. D..... | Concordia..... | 1 | 1 | 0 | 0 | 0 | 0 |
| Coffey..... | 15,245 | H. F. Salisbury, M. D..... | Burlington..... | 8 | 2 | 1 | 0 | 0 | 0 |
| Comanche..... | 2,397 | Fred. L. Holcomb, M. D..... | Coldwater..... | 0 | 0 | 0 | 0 | 2 | 0 |
| Cowley..... | 29,481 | D. F. Coffey, M. D..... | Winfield..... | 11 | 11 | 3 | 0 | 9 | 0 |
| Crawford..... | 51,423 | F. L. Keeler, M. D..... | Farlington..... | 23 | 16 | 29 | 3 | 10 | 0 |
| Decatur..... | 10,296 | Selden Miner, M. D..... | Oberlin..... | 1 | 0 | 9 | 0 | 7 | 0 |
| Dickinson..... | 24,760 | T. R. Conklin, M. D..... | Abilene..... | 6 | 2 | 7 | 0 | 3 | 0 |
| Doniphan..... | 18,611 | R. R. Clutz, M. D..... | Bendena..... | 9 | 0 | 3 | 0 | 10 | 0 |
| Douglas..... | 25,941 | John C. Rudolph, M. D..... | Lawrence..... | 37 | 4 | 61 | 1 | 2 | 0 |
| Edwards..... | 6,373 | M. De Tar, M. D..... | Kinsley..... | 1 | 0 | 11 | 0 | 15 | 0 |
| Elk..... | 10,225 | G. H. Grinnell, M. D..... | Howard..... | 12 | 1 | 20 | 0 | 11 | 0 |
| Ellis..... | 11,394 | J. U. Catudal, M. D..... | Hays..... | 22 | 7 | 38 | 0 | 6 | 0 |
| Ellsworth..... | 9,673 | Alfred O'Donnell, M. D..... | Ellsworth..... | 16 | 1 | 47 | 3 | 0 | 0 |
| Finney..... | 7,468 | Andrew Sabine, M. D..... | Garden City..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford..... | 10,669 | H. Whitworth, M. D..... | Dodge City..... | 10 | 2 | 12 | 0 | 18 | 0 |
| Franklin..... | 21,088 | W. L. Jacobs, M. D..... | Ottawa..... | 5 | 2 | 49 | 3 | 6 | 0 |
| Gray..... | 10,540 | L. R. King, M. D..... | Junction City..... | 29 | 2 | 5 | 1 | 1 | 0 |
| Gove..... | 4,887 | J. H. Naughton, M. D..... | Gove..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham..... | 7,798 | A. H. Van Duyn, M. D..... | Hill City..... | 0 | 0 | 0 | 0 | 50 | 0 |
| Grant..... | 1,071 | R. E. Buckmaster, M. D..... | Ulysses..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Gray..... | 2,968 | G. W. Hollenbeak, M. D..... | Cimarron..... | 7 | 1 | 0 | 0 | 0 | 0 |
| Greeley①..... | 1,515 | | | | | | | | |
| Greenwood..... | 15,774 | W. S. Moonlight, M. D..... | Eureka..... | 5 | 3 | 7 | 0 | 37 | 0 |
| Hamilton..... | 3,273 | R. M. Van Duzer, M. D..... | Syracuse..... | 0 | 0 | 8 | 0 | 2 | 0 |
| Harper..... | 12,972 | A. D. Updegraff, M. D..... | Anthony..... | 38 | 2 | 15 | 0 | 28 | 0 |
| Harvey..... | 17,204 | John L. Grove, M. D..... | Newton..... | 68 | 3 | 14 | 1 | 25 | 0 |
| Haskell..... | 1,418 | L. V. Miner, M. D..... | Santa Fe..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman..... | 2,904 | A. B. Scott, M. D..... | Jetmore..... | 1 | 1 | 0 | 0 | 2 | 0 |
| Jackson..... | 15,300 | E. W. Reed, M. D..... | Holton..... | 8 | 2 | 14 | 0 | 152 | 0 |
| Jefferson..... | 15,677 | Ira Puderbaugh, M. D..... | Ozawake..... | 24 | 0 | 19 | 1 | 14 | 0 |
| Jewell..... | 17,619 | D. D. Allen, M. D..... | Mankato..... | 3 | 8 | 68 | 1 | 27 | 0 |
| Johnson..... | 16,466 | H. H. Johnson, M. D..... | Olathe..... | 1 | 1 | 3 | 1 | 0 | 0 |
| Kearny..... | 3,296 | G. F. Johnston, M. D..... | Lakin..... | 0 | 0 | 11 | 1 | 1 | 0 |
| Kingman..... | 12,562 | M. H. Haskins, M. D..... | Kingman..... | 10 | 1 | 13 | 0 | 32 | 0 |
| Kiowa..... | 4,429 | J. A. Gardner, M. D..... | Greensburg..... | 0 | 0 | 0 | 0 | 2 | 0 |
| Labette..... | 35,113 | S. J. Dobson, M. D..... | Edna..... | 3 | 1 | 5 | 0 | 32 | 0 |
| Lane..... | 2,694 | R. B. Mullins, M. D..... | Dighton..... | 0 | 0 | 7 | 0 | 0 | 0 |
| Leavenworth..... | 40,027 | W. A. Adams, M. D..... | Easton..... | 9 | 0 | 30 | 0 | 85 | 0 |
| Lincoln..... | 9,960 | J. Loughridge, M. D..... | Lincoln..... | 17 | 2 | 8 | 0 | 7 | 0 |
| Linn①..... | 15,313 | | | | | | | | |
| Logan..... | 3,785 | C. M. Miller..... | Oakley..... | 0 | 0 | 3 | 0 | 2 | 0 |
| Lyon..... | 25,047 | J. M. Parrington, M. D..... | Emporia..... | 6 | 1 | 72 | 12 | 56 | 0 |
| Marion..... | 21,639 | G. P. Marner, M. D..... | Marion..... | 1 | 1 | 10 | 0 | 11 | 0 |
| Marshall..... | 23,725 | B. P. Hatch, M. D..... | Beattie..... | 7 | 1 | 4 | 0 | 35 | 0 |

Fourth Biennial Report.

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FROM COUNTY HEALTH OFFICERS.

DISEASES, 1908.

| Measles. | | Typhoid fever. | | Chick- en-pox. | | Cholera infan- tum. | | Dysen- tery. | | Consump- tion. | | Total number of deaths from all causes. | Total number of births. | Total number of marriages. | Salary of health officer. | Expenses incurred by county in control- ling contagious dis- eases. |
|----------|---------|----------------|---------|-------------------|---------|---------------------------|---------|-----------------|---------|-------------------|---------|-----------------------------------------------|----------------------------|-------------------------------|------------------------------|------------------------------------------------------------------------------|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | | | | | |
| 0 | 0 | 60 | 9 | 0 | 0 | 6 | 6 | 3 | 3 | 30 | 18 | 216 | 120 | 62 | \$240 00 | \$200 00 |
| 1 | 0 | 8 | 8 | 2 | 0 | 10 | 10 | 2 | 2 | 5 | 4 | 104 | 5 | 240 | 240 00 | 240 00 |
| 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 44 | 55 | 475 | 70 00 | 522 86 |
| 1 | 0 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 13 | 36 | 70 | 70 00 | 70 00 |
| 0 | 0 | 15 | 8 | 6 | 0 | 0 | 0 | 3 | 3 | 14 | 12 | 135 | 343 | 178 | 100 00 | 100 00 |
| 0 | 0 | 7 | 5 | 2 | 0 | 2 | 2 | 0 | 0 | 18 | 18 | 315 | 176 | 298 | 120 00 | 120 00 |
| 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | 10 | 114 | 59 | 157 | 100 00 | 100 00 |
| 30 | 1 | 11 | 3 | 1 | 0 | 1 | 1 | 1 | 1 | 13 | 13 | 155 | 105 | 58 | 100 00 | 100 00 |
| 21 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 80 | 162 | 58 | 60 00 | 62 00 |
| 28 | 1 | 8 | 8 | 0 | 0 | 2 | 2 | 0 | 0 | 24 | 23 | 365 | 617 | 534 | 240 00 | 1,000 00 |
| 0 | 0 | 3 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 3 | 3 | 32 | 34 | 18 | 75 00 | 390 00 |
| 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 48 | 34 | Fees. | 170 85 |
| 1 | 1 | 7 | 7 | 0 | 0 | 2 | 2 | 0 | 0 | 7 | 7 | 140 | 73 | 135 | 100 00 | 100 00 |
| 1 | 0 | 22 | 2 | 0 | 0 | 0 | 0 | 6 | 5 | 10 | 7 | 130 | 114 | 127 | 600 00 | 600 00 |
| 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 15 | 48 | 45 | 25 00 | 25 00 |
| 0 | 0 | 15 | 11 | 0 | 0 | 4 | 4 | 0 | 0 | 18 | 18 | 281 | 166 | 166 | Fees. | 166 00 |
| 10 | 1 | 20 | 15 | 10 | 0 | 4 | 4 | 16 | 16 | 22 | 22 | 453 | 332 | 430 | 300 00 | 300 00 |
| 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 61 | 79 | 100 00 | 100 00 |
| 0 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 8 | 156 | 206 | 217 | 400 00 | 400 00 |
| 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 55 | 226 | 72 | 90 00 | 225 00 |
| 9 | 0 | 19 | 3 | 12 | 0 | 3 | 3 | 5 | 5 | 39 | 39 | 388 | 411 | 47 | 60 & fees. | 600 00 |
| 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 39 | 39 | 79 | 40 00 | 227 50 |
| 20 | 0 | 8 | 1 | 25 | 0 | 0 | 0 | 10 | 9 | 5 | 5 | 68 | 100 | 79 | 75 00 | 300 00 |
| 0 | 0 | 0 | 0 | 6 | 0 | 8 | 8 | 0 | 0 | 6 | 6 | 89 | 426 | 113 | 50 00 | 80 00 |
| 10 | 0 | 7 | 3 | 0 | 0 | 12 | 0 | 0 | 0 | 5 | 4 | 91 | 197 | 94 | 100 & fees. | 275 00 |
| 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 0 | 0 | 9 | 9 | 76 | 66 | 66 | 200 00 | 200 00 |
| 40 | 0 | 27 | 2 | 0 | 0 | 6 | 6 | 3 | 2 | 5 | 5 | 121 | 256 | 89 | 350 00 | 350 00 |
| 1 | 0 | 16 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 19 | 19 | 181 | 206 | 93 | 100 00 | 925 25 |
| 15 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 5 | 5 | 7 | 7 | 105 | 187 | 163 | 100 00 | 100 00 |
| 20 | 0 | 4 | 0 | 2 | 0 | 2 | 2 | 1 | 1 | 6 | 6 | 31 | 55 | 31 | 240 00 | 240 00 |
| 0 | 0 | 10 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 1 | 0 | 25 | 20 | 34 | 100 00 | 100 00 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 17 | 17 | 25 00 | 25 00 |
| 28 | 0 | 6 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 31 | 91 | 23 | 25 00 | 25 00 |
| 11 | 1 | 4 | 3 | 0 | 0 | 3 | 3 | 1 | 1 | 7 | 7 | 86 | 396 | 106 | 120 & fees. | 500 00 |
| 4 | 0 | 5 | 1 | 2 | 0 | 0 | 0 | 6 | 4 | 2 | 2 | 25 | 60 | 22 | 25 00 | 20 00 |
| 13 | 4 | 9 | 3 | 1 | 0 | 9 | 0 | 1 | 1 | 6 | 5 | 113 | 102 | 168 | 100 & fees. | 650 00 |
| 7 | 0 | 15 | 6 | 7 | 0 | 0 | 0 | 2 | 2 | 5 | 5 | 102 | 168 | 240 | 450 00 | 100 00 |
| 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 16 | 9 | None. | None. |
| 12 | 0 | 11 | 0 | 15 | 0 | 5 | 0 | 11 | 1 | 2 | 0 | 16 | 63 | 22 | 60 00 | 60 00 |
| 1 | 0 | 3 | 5 | 0 | 0 | 1 | 1 | 2 | 2 | 7 | 7 | 120 | 165 | 192 | 500 00 | 400 00 |
| 38 | 1 | 2 | 2 | 0 | 0 | 5 | 5 | 1 | 1 | 2 | 2 | 112 | 206 | 70 | 800 80 | 800 80 |
| 300 | 8 | 35 | 3 | 200 | 0 | 100 | 0 | 40 | 0 | 4 | 4 | 118 | 198 | 130 | 50 00 | 50 00 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 24 | 50 | 30 | 60 00 | 60 00 |
| 28 | 0 | 30 | 2 | 0 | 0 | 10 | 0 | 9 | 0 | 6 | 2 | 16 | 56 | 30 | 36 & fees. | 50 00 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 38 | 29 | 121 | 100 00 | 200 00 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 3 | 14 | 81 | 42 | 44 00 | 44 00 |
| 15 | 0 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 8 | 77 | 207 | 264 | 100 00 | 200 00 |
| 1 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 14 | 22 | 19 | 25 00 | 124 00 |
| 3 | 0 | 6 | 1 | 0 | 0 | 9 | 0 | 1 | 1 | 13 | 13 | 150 | 122 | 732 | 120 00 | 120 00 |
| 4 | 2 | 3 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 8 | 6 | 84 | 171 | 96 | 100 00 | 100 00 |
| 70 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 10 | 25 | 14 | 60 00 | 250 00 |
| 60 | 0 | 56 | 6 | 2 | 0 | 8 | 8 | 35 | 0 | 19 | 19 | 241 | 273 | 273 | 75 00 | 75 00 |
| 8 | 0 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 3 | 98 | 214 | 100 | 100 00 | 300 00 |
| 31 | 0 | 4 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 17 | 17 | 200 | 420 | 198 | 400 00 | 400 00 |

TABLE No. 4-

| COUNTIES. | Popu- lation. | Health officer. | Address. | COMMUNICABLE | | | | | |
|-------------------|------------------|----------------------------------|--------------------|------------------|---------------|-------------------|---------------|----------------|---------------|
| | | | | Diph- theria. | | Scarlet fever. | | Small- pox. | |
| | | | | Cases ... | Deaths ... | Cases ... | Deaths ... | Cases ... | Deaths ... |
| McPherson | 20,659 | G. R. Dean, M. D. | McPherson..... | 6 | 1 | 0 | 0 | 4 | 1 |
| Meade | 4,866 | Wm. F. Free, M. D. | Meade | 10 | 4 | 0 | 0 | 0 | 0 |
| Miami..... | 20,174 | J. H. Haldeman, M. D. | Paola..... | 0 | 0 | 100 | 1 | 10 | 0 |
| Mitchell..... | 13,169 | Mary J. Lobdell, M. D. | Beloit..... | 1 | 0 | 7 | 0 | 9 | 0 |
| Montgomery | 60,666 | G. C. Chaney, M. D. | Independence..... | 17 | 8 | 29 | 1 | 61 | 0 |
| Morris | 12,145 | W. E. Crawford, M. D. | Council Grove..... | 35 | 3 | 48 | 0 | 8 | 0 |
| Morton..... | 1,050 | A. T. Coffman, M. D. | Richfield..... | 0 | 0 | 1 | 0 | 0 | 0 |
| Nemaha..... | 20,063 | Wm. L. Carlyle, M. D. | Sabetha..... | 3 | 2 | 12 | 0 | 131 | 1 |
| Neosho..... | 22,915 | U. G. Hoshaw, M. D. | Chanute..... | 28 | 2 | 8 | 0 | 22 | 1 |
| Ness..... | 5,709 | C. Granville Egerton, M. D. | Ness City..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 13,891 | C. G. Brethouwer, M. D. | Norton..... | 1 | 1 | 14 | 0 | 1 | 0 |
| Osage..... | 20,209 | R. H. Miles, M. D. | Lyndon..... | 8 | 1 | 2 | 0 | 32 | 2 |
| Osborne..... | 12,696 | A. C. Dillon..... | Osborne..... | 7 | 1 | 16 | 0 | 21 | 0 |
| Ottawa..... | 11,171 | F. E. Harvey..... | Minneapolis..... | 4 | 2 | 3 | 0 | 0 | 0 |
| Pawnee..... | 7,446 | C. C. Koona, M. D. | Larned..... | 6 | 0 | 12 | 1 | 5 | 0 |
| Phillips..... | 15,074 | J. L. Shewmaker, M. D. | Phillipsburg..... | 8 | 1 | 1 | 1 | 2 | 0 |
| Pottawatomie..... | 16,580 | J. C. Wilhoit, M. D. | St. George..... | 3 | 1 | 8 | 0 | 141 | 0 |
| Pratt..... | 9,571 | J. I. Douthart, M. D. | Pratt..... | 2 | 0 | 12 | 0 | 30 | 0 |
| Rawlins..... | 6,154 | L. G. Graves, M. D. | Atwood..... | 3 | 0 | 31 | 2 | 0 | 0 |
| Rene..... | 34,765 | F. A. Forney, M. D. | Hutchinson..... | 45 | 7 | 29 | 5 | 111 | 0 |
| Republic..... | 16,548 | J. B. Henry, M. D. | Scandia..... | 10 | 0 | 25 | 0 | 110 | 0 |
| Rice..... | 13,560 | J. S. McBride, M. D. | Lyons..... | 2 | 1 | 8 | 0 | 0 | 0 |
| Riley..... | 15,164 | J. D. Colt..... | Manhattan..... | 17 | 1 | 14 | 1 | 64 | 0 |
| Rooks..... | 10,511 | W. H. Ferguson, M. D. | La Crosse..... | 22 | 7 | 16 | 0 | 13 | 0 |
| Rush..... | 6,828 | W. W. Bowlsus, M. D. | Bunkershill..... | 10 | 2 | 11 | 1 | 0 | 0 |
| Russell..... | 9,321 | O. D. Walker, M. D. | Salina..... | 14 | 4 | 10 | 0 | 109 | 0 |
| Saline..... | 21,561 | H. W. Wright, M. D. | Scott..... | 0 | 0 | 0 | 0 | 15 | 0 |
| Scott..... | 2,997 | Levi Horner, M. D. | Wichita..... | 2 | 2 | 4 | 4 | 24 | 0 |
| Sedgwick..... | 59,888 | Geo. S. Smith, M. D. | Liberal..... | 0 | 0 | 2 | 0 | 25 | 0 |
| Seward..... | 3,520 | D. T. Nicoll, M. D. | Topeka..... | 19 | 2 | 60 | 1 | 83 | 0 |
| Shawnee..... | 59,245 | F. A. Hall, M. D. | Hoxie..... | 0 | 0 | 0 | 0 | 60 | 0 |
| Sheridan..... | 5,604 | F. H. Smith, M. D. | Goodland..... | 8 | 0 | 24 | 1 | 0 | 0 |
| Sherman..... | 4,656 | B. W. Slagle, M. D. | Smith Center..... | 7 | 0 | 15 | 0 | 11 | 0 |
| Smith..... | 15,483 | J. P. H. Dykes, M. D. | Stafford..... | 12 | 0 | 7 | 1 | 1 | 0 |
| Stafford..... | 10,389 | B. F. Finn, M. D. | Johnson..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Stanton..... | 1,041 | L. F. Harmon, M. D. | Wellington..... | 46 | 4 | 23 | 0 | 48 | 0 |
| Stevens..... | 2,138 | Wm. M. Beaver, M. D. | Colby..... | 4 | 2 | 6 | 0 | 12 | 0 |
| Sumner..... | 26,781 | A. B. Jones, M. D. | Wa Keeney..... | 0 | 0 | 16 | 1 | 15 | 0 |
| Thomas..... | 5,638 | G. W. B. Beverly, M. D. | Alma..... | 18 | 1 | 2 | 0 | 120 | 0 |
| Trego..... | 4,623 | Geo. E. Tooley, M. D. | Washington..... | 4 | 0 | 23 | 0 | 43 | 1 |
| Wabawsee..... | 12,534 | O. E. Smith, M. D. | Leoti..... | 0 | 0 | 0 | 0 | 20 | 0 |
| Wallace..... | 2,191 | F. M. Wiley, M. D. | Fredonia..... | 4 | 1 | 11 | 0 | 40 | 0 |
| Washington..... | 20,091 | H. W. West, M. D. | Yates Center..... | 1 | 0 | 0 | 0 | 2 | 0 |
| Wichita..... | 2,022 | L. D. Mabie, M. D. | Kansas City..... | 10 | 2 | 15 | 2 | 42 | 0 |
| Wilson..... | 19,507 | J. C. Cole, M. D. | | | | | | | |
| Woodson..... | 10,020 | W. H. Wells, M. D. | | | | | | | |
| Wyandotte..... | 111,316 | J. A. Fulton, M. D. | | | | | | | |
| Cities. | | | | | | | | | |
| Atchison..... | 16,691 | C. R. Carpenter, M. D. | | | | | | | |
| Coffeyville..... | 17,251 | Chas. Brady, M. D. | | | | | | | |
| Kansas City..... | 80,839 | M. R. Mitchell, M. D. | | | | | | | |
| Leavenworth..... | 22,117 | | | | | | | | |
| Parsons..... | 15,746 | | | | | | | | |
| Pittsburg..... | 17,267 | | | | | | | | |
| Topeka..... | 43,279 | | | | | | | | |
| Wichita..... | 40,660 | | | | | | | | |
| Totals..... | | | | 1,301 | 194 | 1,757 | 75 | 3,240 | 8 |

1. No health officer.

CONCLUDED.

DISEASES, 1906.

| Measles. | | Typhoid fever. | | Chick-en-pox. | | Cholera infantum. | | Dysentery. | | Consumption. | | Total number of deaths from all causes. | Total number of births. | Total number of marriages. | Salary of health officer. | Expenses incurred by counties in controlling contagious diseases. |
|----------|---------|----------------|---------|---------------|---------|-------------------|---------|------------|---------|--------------|---------|-----------------------------------------|-------------------------|----------------------------|---------------------------|-------------------------------------------------------------------|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | | | | | |
| 29 | 0 | 6 | 3 | 41 | 0 | 1 | 1 | 2 | 0 | 8 | 8 | 134 | 162 | 164 | \$460 00 | ..... |
| 4 | 0 | 16 | 3 | 0 | 0 | 1 | 0 | 8 | 1 | 7 | 4 | 39 | 92 | 48 | 100 00 | ..... |
| 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 4 | 4 | 59 | 110 | 40 | 60 00 | ..... |
| 5 | 0 | 3 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 114 | 232 | 152 | 100 00 | \$200 00 |
| 29 | 1 | 27 | 9 | 3 | 1 | 4 | 4 | 0 | 0 | 5 | 5 | 139 | 497 | 580 | 200 & fees. | 1,000 00 |
| 36 | 0 | 47 | 6 | 15 | 0 | 28 | 0 | 19 | 0 | 25 | 9 | 106 | 132 | 103 | 100 00 | ..... |
| 3 | 0 | 1 | 0 | 0 | 0 | 8 | 2 | 5 | 0 | 2 | 1 | 11 | 17 | 6 | 400 00 | ..... |
| 4 | 1 | 9 | 5 | 3 | 0 | 4 | 1 | 3 | 3 | 10 | 8 | 201 | 720 | 146 | Fees. | 300 00 |
| 2 | 2 | 7 | 1 | 1 | 0 | 3 | 3 | 1 | 1 | 13 | 13 | 165 | 251 | 139 | 200 00 | 600 00 |
| 40 | 0 | 3 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 29 | 41 | 46 | 150 00 | 100 00 |
| 0 | 0 | 7 | 0 | 0 | 0 | 13 | 1 | 7 | 1 | 3 | 3 | 56 | 56 | 133 | 60 00 | ..... |
| 32 | 1 | 3 | 3 | 0 | 0 | 1 | 1 | 1 | 1 | 11 | 11 | 208 | 222 | 155 | 50 & fees. | 173 00 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 84 | 84 | ..... | 100 00 | ..... |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 40 | 32 | 38 | 250 00 | 250 00 |
| 0 | 0 | 15 | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 5 | 3 | 40 | 110 | 72 | 200 00 | 300 00 |
| 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 72 | 150 | 113 | 150 00 | ..... |
| 1 | 0 | 3 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 4 | 4 | 73 | 206 | 40 | 225 00 | 1,200 00 |
| 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 74 | 193 | 115 | 50 & fees. | 500 00 |
| 27 | 0 | 8 | 4 | 0 | 0 | 3 | 3 | 0 | 0 | 9 | 2 | 52 | 68 | ..... | 300 00 | 600 00 |
| 0 | 0 | 11 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 17 | 17 | 152 | 172 | 346 | 480 00 | ..... |
| 42 | 0 | 20 | 4 | 0 | 0 | 1 | 1 | 1 | 1 | 12 | 12 | 101 | 249 | 126 | 295 00 | 695 00 |
| 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 17 | 50 | 111 | 50 00 | 50 00 |
| 84 | 1 | 9 | 2 | 127 | 0 | 52 | 9 | 20 | 1 | 11 | 4 | 156 | 84 | 94 | 350 00 | ..... |
| 230 | 0 | 9 | 7 | 20 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 60 | 140 | 30 | 12 00 | 150 00 |
| 12 | 0 | 6 | 1 | 16 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 50 | 57 | 73 | 100 00 | 180 00 |
| 4 | 2 | 2 | 0 | 0 | 0 | 3 | 3 | 8 | 8 | 8 | 6 | 179 | 336 | 216 | 125 00 | 996 75 |
| 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 | 3 | 9 | 41 | 22 | 50 00 | 50 00 |
| 10 | 2 | 18 | 18 | 1 | 0 | 2 | 2 | 0 | 0 | 39 | 39 | 654 | 88 | 902 | 120 00 | 200 00 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 17 | 36 | 84 | 50 00 | 50 00 |
| 6 | 0 | 1 | 0 | 18 | 0 | 2 | 2 | 0 | 0 | 3 | 2 | 30 | 72 | ..... | 600 00 | ..... |
| 5 | 0 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 40 | 53 | 36 00 | ..... |
| 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 34 | 129 | 58 | 200 00 | 164 00 |
| 0 | 0 | 3 | 3 | 0 | 0 | 7 | 7 | 2 | 2 | 8 | 8 | 73 | 88 | 102 | 40 00 | ..... |
| 6 | 0 | 15 | 8 | 11 | 6 | 13 | 9 | 6 | 2 | 6 | 5 | 117 | 289 | 83 | 100 00 | ..... |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ..... | 3 | 10 | 500 00 | ..... |
| 10 | 1 | 19 | 1 | 0 | 0 | 20 | 2 | 26 | 3 | 13 | 11 | 114 | 150 | 288 | 100 00 | ..... |
| 1 | 0 | 12 | 2 | 3 | 0 | 1 | 1 | 5 | 1 | 4 | 2 | 34 | 125 | 41 | 75 00 | 675 00 |
| 20 | 0 | 16 | 0 | 20 | 0 | 15 | 0 | 8 | 0 | 2 | 1 | 24 | 92 | 52 | ..... | ..... |
| 8 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 94 | 104 | 71 | 200 00 | ..... |
| 10 | 1 | 10 | 6 | 0 | 0 | 5 | 5 | 0 | 0 | 13 | 13 | 169 | 176 | 127 | 80 & fees. | 500 00 |
| 6 | 0 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 31 | ..... | 125 00 | 150 00 |
| 0 | 0 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 8 | 181 | 199 | 189 | 20 & fees. | 400 00 |
| 0 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 6 | 6 | 93 | 147 | 87 | 50 & fees. | ..... |
| 19 | 0 | 8 | 2 | 0 | 0 | 1 | 1 | 4 | 4 | 16 | 13 | 162 | 77 | ..... | ..... | ..... |
| 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 24 | 24 | 247 | 90 | 299 | 475 00 | 522 86 |
| 8 | 0 | 12 | 6 | 1 | 0 | 4 | 2 | 1 | 1 | 10 | 9 | 67 | 167 | ..... | 380 00 | 50 00 |
| 53 | 0 | 153 | 24 | 30 | 0 | 22 | 22 | 5 | 2 | 233 | 150 | 1,112 | 1,424 | 1,247 | None. | ..... |
| 139 | 1 | 10 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 819 | 304 | 734 | 900 00 | ..... |
| 79 | 0 | 6 | 6 | 17 | 0 | 8 | 6 | 23 | 6 | 34 | 17 | 222 | 450 | ..... | 380 00 | 405 00 |
| 74 | 0 | 27 | 17 | 91 | 0 | 6 | 6 | 3 | 3 | 67 | 62 | 629 | 428 | ..... | 660 00 | 5,300 00 |
| 2,623 | 32 | 1,186 | 346 | 764 | 7 | 453 | 187 | 384 | 118 | 1,142 | 943 | 12,712 | 17,166 | 13,539 | ..... | ..... |

TABLE No. 5—CONTINUED.[illegible]

TABLE No. 4.-

| COUNTIES. | Popu- lation. | Health officer. | Address. | COMMUNICABLE | | | | | |
|------------------|------------------|-----------------------------|------------------|------------------|-----------|-------------------|-----------|----------------|-----------|
| | | | | Diph- theria. | | Scarlet fever. | | Small- pox. | |
| | | | | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| McPherson..... | 20,659 | G. R. Dean, M. D. | McPherson..... | 6 | 1 | 0 | 0 | 4 | 1 |
| Meade..... | 4,886 | Wm. F. Free, M. D. | Meade..... | 10 | 4 | 0 | 0 | 0 | 0 |
| Miami..... | 20,174 | J. H. Haldeman, M. D. | Paola..... | 0 | 0 | 100 | 1 | 10 | 0 |
| Mitchell..... | 13,169 | Mary J. Loddell, M. D. | Beloit..... | 1 | 0 | 7 | 0 | 9 | 0 |
| Montgomery..... | 60,566 | G. C. Chaney, M. D. | Independence... | 17 | 8 | 29 | 1 | 61 | 0 |
| Morris..... | 12,145 | W. E. Crawford, M. D. | Council Grove... | 35 | 3 | 48 | 0 | 8 | 0 |
| Morton..... | 1,050 | A. T. Coffman, M. D. | Richfield..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 20,068 | Wm. L. Carlyle, M. D. | Sabetha..... | 3 | 2 | 12 | 0 | 131 | 1 |
| Neosho..... | 22,915 | U. G. Hoshaw, M. D. | Chanute..... | 28 | 2 | 8 | 0 | 22 | 1 |
| Ness..... | 5,709 | C. Granville Egerton, M. D. | Ness City..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 13,891 | C. G. Brethouwer, M. D. | Norton..... | 1 | 1 | 14 | 0 | 1 | 0 |
| Osage..... | 20,209 | R. H. Miles, M. D. | Lyndon..... | 8 | 1 | 2 | 0 | 32 | 2 |
| Osborne..... | 12,586 | A. C. Dillon..... | Osborne..... | 7 | 1 | 16 | 0 | 21 | 0 |
| Ottawa..... | 11,171 | F. E. Harvey..... | Minneapolis... | 4 | 2 | 3 | 0 | 0 | 0 |
| Pawnee..... | 7,446 | C. C. Koons, M. D. | Larned..... | 6 | 0 | 12 | 1 | 5 | 0 |
| Phillips..... | 15,074 | J. L. Shewmaker, M. D. | Phillipsburg... | 8 | 1 | 1 | 1 | 2 | 0 |
| Pottawatomie... | 16,580 | J. C. Wilhoit, M. D. | St. George..... | 3 | 1 | 8 | 0 | 141 | 0 |
| Pratt..... | 9,571 | J. I. Douthart, M. D. | Pratt..... | 2 | 0 | 12 | 0 | 30 | 0 |
| Rawlins..... | 6,154 | L. G. Graves, M. D. | Atwood..... | 3 | 0 | 81 | 2 | 0 | 0 |
| Rene..... | 34,765 | F. A. Forney, M. D. | Hutchinson... | 45 | 7 | 29 | 5 | 111 | 0 |
| Republic..... | 16,548 | J. B. Henry, M. D. | Scandia..... | 10 | 0 | 25 | 0 | 110 | 0 |
| Rice..... | 13,560 | J. S. McBride, M. D. | Lyons..... | 2 | 1 | 8 | 0 | 0 | 0 |
| Riley..... | 15,164 | J. D. Colt..... | Manhattan..... | 17 | 1 | 14 | 1 | 64 | 0 |
| Books①..... | 10,511 | W. H. Ferguson, M. D. | La Crosse..... | 22 | 7 | 16 | 0 | 15 | 0 |
| Rush..... | 6,828 | W. W. Bowlus, M. D. | Bunkerhill..... | 10 | 2 | 11 | 1 | 0 | 0 |
| Russell..... | 9,321 | O. D. Walker, M. D. | Salina..... | 14 | 4 | 10 | 0 | 109 | 0 |
| Saline..... | 21,561 | H. W. Wright, M. D. | Scott..... | 0 | 0 | 0 | 0 | 15 | 0 |
| Scott..... | 2,997 | Levi Horner, M. D. | Wichita..... | 2 | 2 | 4 | 4 | 24 | 0 |
| Sedgwick..... | 59,888 | Geo. S. Smith, M. D. | Liberal..... | 0 | 0 | 2 | 0 | 26 | 0 |
| Seward..... | 3,520 | D. T. Nicoll, M. D. | Topeka..... | 19 | 2 | 60 | 1 | 83 | 0 |
| Shawnee..... | 59,245 | F. A. Hall, M. D. | Hoxie..... | 0 | 0 | 0 | 0 | 60 | 0 |
| Sheridan..... | 5,604 | F. H. Smith, M. D. | Goodland..... | 3 | 0 | 24 | 1 | 0 | 0 |
| Sherman..... | 4,656 | B. W. Slagle, M. D. | Smith Center... | 7 | 0 | 15 | 0 | 11 | 0 |
| Smith..... | 15,453 | J. P. H. Dykes, M. D. | Stafford..... | 12 | 0 | 7 | 1 | 1 | 0 |
| Stafford..... | 10,389 | B. F. Finn, M. D. | Johnson..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Stanton..... | 1,041 | L. F. Harmon, M. D. | Wellington..... | 46 | 4 | 25 | 0 | 48 | 0 |
| Stevens①..... | 2,138 | Wm. M. Beaver, M. D. | Colby..... | 4 | 2 | 6 | 0 | 12 | 0 |
| Sumner..... | 28,781 | A. B. Jones, M. D. | Wa Keeney..... | 0 | 0 | 16 | 1 | 15 | 0 |
| Thomas..... | 5,638 | G. W. B. Beverly, M. D. | Alma..... | 18 | 1 | 2 | 0 | 120 | 0 |
| Trego..... | 4,623 | Geo. E. Tooley, M. D. | Washington..... | 4 | 0 | 23 | 0 | 43 | 1 |
| Wabaunsee..... | 12,534 | O. E. Smith, M. D. | Leoti..... | 0 | 0 | 0 | 0 | 20 | 0 |
| Wallace①..... | 2,191 | F. M. Wiley, M. D. | Fredonia..... | 4 | 1 | 11 | 0 | 40 | 0 |
| Washington..... | 20,091 | H. W. West, M. D. | Yates Center... | 1 | 0 | 0 | 0 | 2 | 0 |
| Wichita..... | 2,022 | L. D. Mabie, M. D. | Kansas City.... | 10 | 2 | 15 | 2 | 42 | 0 |
| Wilson..... | 19,507 | J. C. Cole, M. D. | | | | | | | |
| Woodson..... | 10,020 | W. H. Wells, M. D. | | 26 | 3 | 20 | 1 | 303 | 0 |
| Wyandotte..... | 111,316 | C. R. Fulton, M. D. | | 29 | 3 | 8 | 0 | 16 | 0 |
| Cities. | | J. A. Carpenter, M. D. | | 107 | 11 | 119 | 1 | 172 | 0 |
| Atchison..... | 16,691 | Chas. Brady, M. D. | | 48 | 0 | 114 | 4 | 14 | 0 |
| Coffeyville..... | 17,251 | M. R. Mitchell, M. D. | | 17 | 4 | 16 | 0 | 18 | 0 |
| Kansas City... | 90,839 | | | 86 | 4 | 108 | 1 | 181 | 0 |
| Leavenworth... | 22,117 | | | | | | | | |
| Parsons..... | 15,746 | | | | | | | | |
| Pittsburg①..... | 17,287 | | | | | | | | |
| Topeka..... | 43,279 | | | | | | | | |
| Wichita①..... | 40,660 | | | | | | | | |
| Totals..... | | | | 1,801 | 194 | 1,787 | 75 | 3,240 | 3 |

1. No health officer.

CONCLUDED.

DISEASES, 1908.

| Measles. | | Typhoid fever. | | Chick-en-pox. | | Cholera infantum. | | Dysentery. | | Consumption. | | Total number of deaths from all causes. | Total number of births. | Total number of marriages. | Salary of health officer. | Expenses incurred by counties in controlling contagious diseases. |
|----------|---------|----------------|---------|---------------|---------|-------------------|---------|------------|---------|--------------|---------|-----------------------------------------|-------------------------|----------------------------|---------------------------|-------------------------------------------------------------------|
| Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | | | | | |
| 29 | 0 | 6 | 3 | 41 | 0 | 1 | 1 | 2 | 0 | 8 | 8 | 134 | 162 | 164 | \$460 00 | ..... |
| 4 | 0 | 16 | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 7 | 4 | 39 | 92 | 48 | 100 00 | ..... |
| 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 4 | 4 | 59 | 110 | 40 | 60 00 | ..... |
| 5 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 114 | 232 | 152 | 100 00 | \$200 00 |
| 23 | 1 | 27 | 9 | 3 | 1 | 4 | 4 | 0 | 0 | 5 | 5 | 139 | 497 | 580 | 200 & fees. | 1,000 00 |
| 36 | 0 | 47 | 6 | 15 | 0 | 28 | 0 | 19 | 0 | 25 | 9 | 106 | 182 | 103 | 100 00 | ..... |
| 3 | 0 | 1 | 0 | 0 | 0 | 8 | 2 | 5 | 0 | 2 | 1 | 11 | 17 | 6 | 400 00 | ..... |
| 4 | 1 | 9 | 5 | 3 | 0 | 4 | 1 | 3 | 3 | 10 | 8 | 201 | 720 | 146 | Fees. | 300 00 |
| 2 | 2 | 7 | 7 | 1 | 0 | 3 | 3 | 1 | 1 | 13 | 13 | 165 | 251 | 189 | 200 00 | 600 00 |
| 40 | 0 | 3 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 29 | 41 | 46 | 150 00 | 100 00 |
| 0 | 0 | 7 | 0 | 0 | 0 | 13 | 1 | 7 | 1 | 3 | 3 | 56 | 56 | 133 | 60 00 | ..... |
| 23 | 1 | 3 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 11 | 11 | 208 | 222 | 155 | 50 & fees. | 173 00 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 84 | 84 | 100 | 100 00 | ..... |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 40 | 32 | 38 | 250 00 | 250 00 |
| 0 | 0 | 15 | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 5 | 3 | 40 | 110 | 72 | 200 00 | 300 00 |
| 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 72 | 150 | 113 | 150 00 | ..... |
| 1 | 0 | 3 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 4 | 4 | 73 | 206 | 40 | 225 00 | 1,200 00 |
| 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 74 | 193 | 115 | 50 & fees. | 500 00 |
| 27 | 0 | 8 | 4 | 0 | 0 | 3 | 3 | 0 | 0 | 9 | 2 | 52 | 68 | 300 | 300 00 | 600 00 |
| 0 | 0 | 11 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 17 | 17 | 152 | 172 | 346 | 480 00 | ..... |
| 42 | 0 | 20 | 4 | 0 | 0 | 1 | 1 | 1 | 1 | 12 | 12 | 101 | 249 | 126 | 295 00 | 695 00 |
| 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 17 | 50 | 111 | 50 00 | 50 00 |
| 94 | 1 | 9 | 2 | 127 | 0 | 52 | 9 | 20 | 1 | 11 | 4 | 156 | 84 | 94 | 350 00 | ..... |
| 280 | 0 | 9 | 7 | 20 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 60 | 140 | 30 | 12 00 | 150 00 |
| 12 | 0 | 6 | 1 | 16 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 50 | 57 | 73 | 100 00 | 180 00 |
| 4 | 2 | 2 | 1 | 0 | 0 | 3 | 3 | 8 | 8 | 3 | 6 | 179 | 336 | 216 | 125 00 | 995 75 |
| 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 | 3 | 9 | 41 | 22 | 50 00 | 50 00 |
| 10 | 2 | 18 | 18 | 1 | 0 | 2 | 2 | 0 | 0 | 39 | 39 | 654 | 88 | 902 | 120 00 | 200 00 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 17 | 36 | 84 | 50 00 | 50 00 |
| 6 | 0 | 1 | 0 | 18 | 0 | 2 | 2 | 0 | 0 | 3 | 2 | 30 | 72 | ..... | 600 00 | ..... |
| 5 | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 40 | 53 | 36 00 | ..... |
| 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 34 | 129 | 58 | 200 00 | 164 00 |
| 0 | 0 | 3 | 3 | 0 | 0 | 7 | 7 | 2 | 2 | 8 | 8 | 73 | 88 | 102 | 40 00 | ..... |
| 6 | 0 | 15 | 8 | 11 | 6 | 13 | 9 | 6 | 5 | 6 | 5 | 117 | 289 | 83 | 100 00 | ..... |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ..... | 3 | 10 | 500 00 | ..... |
| 10 | 1 | 19 | 1 | 0 | 0 | 20 | 2 | 26 | 3 | 13 | 11 | 114 | 150 | 288 | 100 00 | ..... |
| 1 | 0 | 12 | 2 | 3 | 0 | 1 | 1 | 5 | 1 | 4 | 2 | 34 | 125 | 41 | 75 00 | 575 00 |
| 20 | 0 | 16 | 0 | 20 | 0 | 15 | 0 | 8 | 0 | 2 | 1 | 24 | 92 | 52 | ..... | ..... |
| 8 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 94 | 104 | 71 | 200 00 | ..... |
| 10 | 1 | 10 | 6 | 0 | 0 | 5 | 5 | 0 | 0 | 13 | 13 | 169 | 176 | 127 | 80 & fees. | 500 00 |
| 6 | 0 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 31 | ..... | 125 00 | 150 00 |
| 0 | 0 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 8 | 181 | 199 | 189 | 20 & fees. | 400 00 |
| 0 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 6 | 6 | 93 | 147 | 87 | 50 & fees. | ..... |
| 19 | 0 | 8 | 2 | 2 | 0 | 1 | 1 | 4 | 4 | 16 | 13 | 162 | 77 | ..... | ..... | ..... |
| 0 | 0 | 3 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 24 | 24 | 247 | 90 | 299 | 475 00 | 522 86 |
| 8 | 0 | 12 | 6 | 1 | 0 | 4 | 2 | 1 | 1 | 10 | 9 | 67 | 167 | ..... | 360 00 | 50 00 |
| 53 | 0 | 158 | 24 | 30 | 0 | 22 | 5 | 2 | 233 | 150 | 1,112 | 1,424 | 1,247 | None. | ..... | ..... |
| 189 | 1 | 10 | 7 | 4 | 0 | 0 | 0 | 2 | 2 | 20 | 20 | 319 | 304 | 734 | 900 00 | ..... |
| 79 | 0 | 6 | 6 | 17 | 0 | 8 | 6 | 23 | 6 | 34 | 17 | 222 | 450 | ..... | 360 00 | 406 00 |
| 74 | 0 | 27 | 17 | 91 | 0 | 6 | 6 | 3 | 3 | 67 | 62 | 629 | 428 | ..... | 660 00 | 5,300 00 |
| 2,623 | 32 | 1,136 | 346 | 764 | 7 | 453 | 187 | 334 | 118 | 1,142 | 943 | 12,712 | 17,166 | 13,539 | ..... | ..... |

TABLE No. 5.—RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS, 1907.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | | | |
|-----------------|-------------------|--------------------------------|--------------------|-------------------------------|---------------------------|------------------------------------------|-------------------------------|----------------|-------------------------------------------|------------------|--------|-----------|------------|-------------|-------------|------------------------|-------------------------------------------|
| | Abscess. | Alcoholism, acute and chronic. | Anemia, chlorosis. | Cancer and other mal. tumors. | | | | | | Cholera nostras. | Croup. | Diabetes. | Dysentery. | Diphtheria. | Erysipelas. | Influenza (la grippe). | Intermittent fever and malarial cachexia. |
| | | | | Of the buccal cavity. | Of the stomach and liver. | Of the peritoneum, intestines or rectum. | Of the female genital organs. | Of the breast. | Of other organs and organs not specified. | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| Allen..... | | | | 2 | 1 | | 1 | | 1 | 5 | | | 1 | | | | |
| Anderson..... | | | | 18 | 2 | | | | | 1 | | | | | | | |
| Atchison..... | 4 | | | | 1 | | | | | 1 | | 2 | | | | 1 | |
| Barber..... | | | | | 1 | | | | | 1 | | | | | | | |
| Barton..... | | 1 | | | 3 | | | | 2 | | | 2 | | | | 1 | |
| Bourbon..... | 1 | | | | | | | | 2 | | 1 | | | | | | |
| Brown..... | | | | 6 | | | | | | | | 1 | | | | | |
| Butler..... | | | | | 1 | | 1 | | | 9 | | 2 | | | 1 | | |
| Chase..... | | | | | 1 | | | 1 | | | | 1 | | | | | |
| Chautauqua..... | | 1 | | 1 | 1 | | | 1 | | 2 | 1 | 1 | | 2 | | 1 | |
| Cherokee..... | 1 | 1 | | 1 | 2 | | 1 | | 10 | 16 | 6 | 1 | 7 | 7 | | 6 | 7 |
| Cheyenne..... | | | | | | | | 1 | | | | | | | | | |
| Clark..... | | | | | | 1 | 1 | | | 2 | | | | | | | |
| Clay..... | 1 | | | | 2 | 1 | | | 3 | 1 | | 3 | | | 1 | 1 | |
| Cloud..... | 2 | | | | 3 | | | 1 | | | | | | 1 | | | |
| Coffey..... | 1 | | | | 3 | | | | | 1 | | 2 | | 2 | | 1 | |
| Comanche..... | 1 | | | | | | | | 4 | | | | | | | 2 | |
| Cowley..... | 4 | | | | 6 | | | | 10 | 1 | 1 | 1 | | 1 | | 10 | |
| Crawford..... | 2 | 1 | | | 5 | | | | 8 | 10 | | 2 | 2 | 6 | | 8 | 6 |
| Decatur..... | | | | | | | | | | | | | 1 | | | | |
| Dickinson..... | 4 | | | | | 1 | | | 2 | 2 | | 3 | 2 | 3 | | | |
| Doniphan..... | 1 | | | | 2 | | 1 | 1 | | 3 | 1 | 4 | | 1 | | 1 | |
| Douglas..... | 3 | 1 | 3 | | 29 | | 7 | 5 | | 3 | 5 | 3 | 2 | 9 | 1 | 11 | 3 |
| Edwards..... | | | | 1 | 1 | | 1 | | | | | | 2 | 1 | | | |
| Elk..... | | | | | | | | | | | 1 | 1 | 1 | 4 | | 5 | |
| Ellis..... | | | | | 1 | | 6 | | | | 4 | 2 | | | | 2 | |
| Ellsworth..... | | | | 2 | 3 | | 2 | | 3 | 2 | | 1 | | 3 | 1 | | |
| Finney..... | | | | | 1 | | | | 2 | | | 1 | | | | | |
| Ford..... | | | | | | | | | 2 | 5 | 2 | | 1 | | 1 | | |
| Franklin..... | | | 3 | | | 1 | | | 4 | 1 | | 5 | 1 | 1 | | 1 | 1 |
| Geary..... | | | | | 5 | | | 2 | 2 | | | | 5 | 1 | | | |
| Gove..... | | | | | 1 | | | | 1 | 2 | | | | | | | 1 |
| Graham..... | 2 | | | | | | | | | 1 | | 1 | | 2 | | | |
| Grant..... | | | | | | | | | | | | | | | | | |
| Gray..... | | | 1 | | | | | | | | | | | | | | |
| Greeley..... | | | | | | | | | | | | | | | | | |
| Greenwood..... | 1 | 1 | | | 2 | | 3 | | 3 | | | | | 1 | 1 | 3 | |
| Hamilton..... | | | | | | | | | | | | | | | | | |
| Harper..... | 2 | | 1 | | 3 | | | 1 | | | | 1 | 7 | 1 | | | 1 |
| Harvey..... | | | 2 | | 1 | | | | 7 | | 1 | | 4 | 1 | | | |
| Haskell..... | | | | | | | | | | | | | | | | | |
| Hodgeman..... | | | | | | | | | | | | | | | | | |
| Jackson..... | 1 | | | | 4 | | | | 4 | 2 | | 2 | | | | | |
| Jefferson..... | | | | | | | 1 | 1 | | | | | | 2 | | | 2 |
| Jewell..... | | | | | 2 | 1 | 2 | 2 | 1 | | | | | 1 | | | |
| Johnson..... | | | | | 5 | | 1 | | | | | | | | | | |
| Kearny..... | | 1 | | | | | | | | | | 2 | 2 | 2 | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | | | |
|---------------|-------------------|--------------------------------|--------------------|-------------------------------|---------------------------|------------------------------------------|-------------------------------|----------------|-------------------------------------------|------------------|--------|-----------|------------|-------------|-------------|------------------------|-------------------------------------------|
| | Aboresc. | Alcoholism, acute and chronic. | Anemia, chlorosis. | Cancer and other mal. tumors. | | | | | | Cholera nostras. | Croup. | Diabetes. | Dysentery. | Diphtheria. | Erysipelas. | Influenza (In grippe). | Intermittent fever and malarial cachexia. |
| | | | | Of the buccal cavity. | Of the stomach and liver. | Of the peritoneum, intestines or rectum. | Of the female genital organs. | Of the breast. | Of other organs and organs not specified. |  |  |  |  |  |  |  |  | Other tumors (tumors of the female genitalia excepted). |
| Kingman | | | | | | | | | | 1 | | | | | | 1 | |
| Kiowa. | | | | | | | | | | | | | | | | | |
| Labette. | 1 | | | 2 | | | | | | | | | | | | | |
| Lane | | | | | | | | | | | | | | | | | |
| Leavenworth | 1 | | | 3 | 1 | | 1 | | 1 | 2 | 4 | | | | | | |
| Lincoln | 1 | | | 1 | 1 | | | | | | 3 | 1 | | | | | |
| Linn | 1 | | | 1 | | | | | | | 1 | 7 | | | | | |
| Logan | | | | | | | | | 2 | | 1 | 2 | | | | | |
| Lyon. | 2 | 1 | | 1 | | | | 5 | | 3 | 1 | 3 | | | | 1 | |
| Marion. | | | | 2 | | | | | 2 | | | 1 | | | | 1 | |
| Marshall. | 3 | | | 2 | | | 3 | 2 | 1 | 2 | 2 | 9 | | 2 | | | |
| McPherson | | 1 | 1 | 5 | | | | | | | | 1 | | 1 | | | |
| Meade | | | | 1 | | | | | 1 | | | | | | | | |
| Miami. | | | | 3 | | | | 2 | 2 | | | | | | | 1 | |
| Mitchell. | 1 | | | 1 | 1 | | | | 2 | | 2 | | | 1 | 2 | | |
| Montgomery | 3 | 1 | | 1 | | 1 | | | 5 | 4 | 1 | 4 | 5 | | 1 | | 2 |
| Morris. | | | 2 | | | | | | | 1 | | 3 | 3 | | | | 1 |
| Morton. | | | | | | | | | | | | | | | | | |
| Nemaha | 1 | | | 1 | 1 | 3 | | 1 | | | | 1 | | | | 1 | |
| Neosho. | 1 | 1 | | 2 | | | | 3 | 1 | 2 | 2 | 1 | 3 | 5 | | | |
| Ness | | | | | | | | | | | | | | | | | 1 |
| Norton. | | | | | | | | | | | | | 1 | | | | |
| Osage | | 1 | | 2 | | | 1 | 3 | 5 | 3 | 3 | 4 | 1 | 5 | | | |
| Osborne | | | | | | | | | | | 3 | 1 | | 4 | | | |
| Ottawa. | 2 | | | | | 2 | | | | | 1 | | | | | | |
| Pawnee. | | | 1 | 4 | | | | | 2 | | 1 | | 1 | | | | |
| Phillips | | | | 1 | 2 | 4 | | | | | 2 | 3 | | | | | |
| Pottawatomie. | | | | 1 | 2 | | | 1 | | 2 | 7 | 1 | | | | 3 | |
| Pratt | | | | 1 | | | | | 1 | | | 1 | | | | | |
| Rawlins. | 3 | 1 | | 2 | | | | | 2 | 1 | 1 | 1 | | | | 8 | |
| Reno | 1 | | | 4 | | | | | | | 1 | 1 | 2 | 1 | 1 | | |
| Republic. | | 1 | | 3 | 2 | | 2 | | 5 | 1 | | | | | | 2 | |
| Rice. | | | | | | | | | 7 | | | | | | | | |
| Riley. | 1 | 1 | | 1 | 2 | 2 | 2 | 1 | | | 1 | 1 | 1 | | | | 1 |
| Rooks. | | | | 1 | | | | 1 | 2 | | | | | | | 1 | |
| Rush. | | | | | | 1 | | | 1 | | | | 3 | 2 | | | |
| Russell. | | | | 5 | | | | | | | | | | | | | |
| Saline. | | | | 5 | | 3 | 2 | | 6 | 2 | 3 | 3 | | | | 1 | |
| Scott. | | | | | | | | | 3 | | | | | | | | |
| Sedgwick. | | | 1 | 1 | 1 | | | | 1 | | 5 | 4 | | | | | |
| Seward | 1 | | | | | | | | | | | | | | | | 1 |
| Shawnee. | | | | | 1 | | 1 | | | | | 1 | 5 | | | | |
| Sheridan. | 2 | | | | | | | | 1 | | | | | | | | |
| Sherman. | | | | | | | | | 1 | 1 | 1 | | | | | | |
| Smith. | | 3 | | 1 | 3 | 1 | 1 | 1 | 10 | 1 | 7 | 8 | | | | 8 | 1 |
| Stafford. | | 1 | | | | | | | 5 | | 1 | 8 | 2 | | | 2 | |
| Stanton. | | | | | | | | | | | | | | | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | | | | |
|--------------|-------------------|--------------------------------|--------------------|-------------------------------|---------------------------|----------------|------------------------------------------|-------------------------------|----------------|-------------------------------------------|------------------|--------|-----------|------------|-------------|-------------|------------------------|-------------------------------------------|
| | Abscess. | Alcoholism, acute and chronic. | Anemia, chlorosis. | Cancer and other mal. tumors. | | | | | | | Cholera nostras. | Croup. | Diabetes. | Dysentery. | Diphtheria. | Erysipelas. | Influenza (la grippe). | Intermittent fever and malarial cachexia. |
| | | | | Of the buccal cavity. | Of the stomach and liver. | Of the rectum. | Of the peritoneum, intestines or rectum. | Of the female genital organs. | Of the breast. | Of other organs and organs not specified. |  |  |  |  |  |  |  |  | Other tumors (tumors of the female genitals excepted). |
| Stevens. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | .. | 2 | 2 | 1 | 3 | 3 | 1 | .. | |
| Sumner. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Thomas. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Trego. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | 1 | |
| Wabunsee. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | .. | .. | |
| Wallace. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | |
| Washington. | .. | .. | .. | .. | 2 | .. | 2 | 1 | 8 | 1 | 4 | .. | 1 | 2 | .. | 1 | 1 | |
| Wichita. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Wilson. | 2 | .. | .. | .. | 1 | .. | 3 | .. | .. | .. | 3 | 4 | 2 | 2 | 1 | 4 | .. | |
| Woodson. | .. | 2 | 2 | 3 | .. | .. | .. | .. | .. | .. | .. | 2 | 4 | 2 | .. | 3 | .. | |
| Wyandotte. | .. | .. | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | |
| Cities. | | | | | | | | | | | | | | | | | | |
| Coffeyville. | 1 | 1 | .. | .. | 13 | 1 | 11 | 5 | 3 | 2 | 1 | 2 | 1 | 2 | .. | .. | 4 | |
| Kansas City. | .. | 8 | 5 | 4 | 13 | 5 | 2 | 5 | 14 | .. | 8 | 7 | 6 | 21 | 3 | .. | 5 | |
| Leavenworth. | 2 | .. | 1 | 1 | 13 | 2 | 2 | 3 | .. | 1 | 1 | 1 | 1 | .. | 3 | .. | .. | |
| Topeka. | 4 | .. | .. | 12 | 12 | .. | .. | 12 | 1 | 1 | 6 | 3 | 3 | 8 | 1 | 6 | 2 | |
| Wichita. | 3 | 4 | 8 | 16 | 16 | 7 | 3 | 8 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 7 | .. | |
| Totals. | 70 | 33 | 29 | 69 | 216 | 23 | 67 | 36 | 129 | 30 | 175 | 43 | 119 | 113 | 204 | 23 | 51 | |

TABLE No. 5—CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | |
|-----------------|---------------------|--------------------|------------------------------|-----------------------------------|--------------------------------|---------------------------------|---------------|--------------------|-----------------------------------|----------------------------------|-----------------------------------------|-----------------------|--------------|---------------------------------------------|-------------------------|---------------------------------------------|-----------------------------|-------------------------|
| | Whooping-cough..... | Typhoid fever..... | Tuberculosis, abdominal..... | Tuberculosis of the meninges..... | Tuberculosis of the lungs..... | Tuberculosis of the larynx..... | Syphilis..... | Scarlet fever..... | Rheumatism—chronic, and gout..... | Rheumatism—acute, articular..... | Purulent infection and septicaemia..... | Membranous croup..... | Measles..... | Leukæmia..... | Chronic poisonings..... | Congestion and hemorrhage of the brain..... | Other nervous diseases..... | Cerebral softening..... |
| | | | | | | | | | | | | | | | | | | |
| Allen..... | | 18 | | | 19 | | | 9 | | 1 | | | | | | | | |
| Anderson..... | | 9 | | | 6 | | | | 1 | | | | | | | | | |
| Atchison..... | | 4 | | | 23 | | | | | | | | 1 | | | | | |
| Barber..... | | 1 | | | 1 | | | | | | | | | | | | | |
| Barton..... | | 4 | | | 11 | | | | | | | | | | | | 2 | |
| Bourbon..... | | | | | | | | | | | | 2 | | | | | | |
| Brown..... | | 6 | | | 21 | | | 1 | | | | | | | | | 6 | |
| Butler..... | | 1 | | | 6 | | | | | | | | 1 | | | | 2 | |
| Chase..... | | | | | 2 | | | | | | | | | | | | | |
| Chautauqua..... | | 1 | | | 4 | | | 1 | | | | | | | | | 1 | |
| Cherokee..... | | | | | | | | | | | | | | | | | | |
| Cheyenne..... | | 4 | | | 21 | | 1 | | | | | | | | | | 8 | |
| Clark..... | | 3 | | | | | | | | | | | | | | | | |
| Clay..... | | 1 | | | | | | 3 | | | | | | | | | | |
| Cloud..... | | 8 | | | 4 | | | | | | | | | | | | | |
| Coffey..... | | | | | 1 | | | | | | | | | | | | | |
| Comanche..... | | 5 | | | 16 | | | 1 | | | | | | | | | | |
| Cowley..... | | 4 | | | 2 | | | 4 | | | | | | | | | 1 | |
| Crawford..... | | 1 | | | 17 | | | 3 | | | | | | | | | 1 | |
| Decatur..... | | 3 | | | 31 | | | | | | | | | | | | | |
| Dickinson..... | | | | | 6 | | | | | 2 | | | | | | | | |
| Doniphan..... | | 5 | | | 9 | | | | | 1 | | | | | | | | 4 |
| Douglas..... | | 11 | | | 48 | | | 2 | | | | | | 1 | | | | |
| Edwards..... | | | | | 4 | | | 1 | | | | | | | | | 2 | |
| Elk..... | | | | | | | | | | | | 1 | | | | | 1 | |
| Ellis..... | | | | | | | | | | | | | | | | | | |
| Ellsworth..... | | 3 | | | 4 | | | | | | | | | | | | 4 | |
| Finney..... | | 2 | | | 5 | | | | | | | | | | | | 6 | |
| Ford..... | | 3 | | | 7 | | | | | | | | | | | | | |
| Franklin..... | | 1 | | | 9 | | | | | | | | | | | | | |
| Geary..... | | 4 | | | 30 | | | | | | | | | | | | | |
| Gove..... | | 1 | | | 4 | | | | | | | | | | | | 2 | |
| Graham..... | | | | | 2 | | | | | | | | | | | | | |
| Grant..... | | 1 | | | 1 | | | | | | | | | | | | 1 | |
| Gray..... | | | | | 2 | | | | | | | | | | | | | |
| Greeley..... | | 2 | | | | | | | | | | | | | | | | |
| Greenwood..... | | | | | | | | | | | | | | | | | | |
| Hamilton..... | | 4 | | | 4 | | | | | | | | | | | | | |
| Harper..... | | 2 | | | 13 | | | 4 | | | | | | | | | | |
| Harvey..... | | | | | | | | | | | | | | | | | | |
| Haskell..... | | 4 | | | | | | | | | | | | | | | 1 | |
| Hodgeman..... | | 1 | | | | | | | | | | | | | | | | |
| Jackson..... | | 2 | | | 8 | | | | | | | | | | | | 6 | |
| Jefferson..... | | | | | | | | | | | | | | | | | | |
| Jewell..... | | 3 | | | | | | | | | | | | | | | | |
| Johnson..... | | 2 | | | | | | | | | | | | | | | 2 | |
| Kearny..... | | | | | | | | | | | | | | | | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | |
|-------------------|---------------------|--------------------|-----------------------------|----------------------------------|-------------------------------|--------------------------------|---------------|--------------------|----------------------------------|---------------------------------|----------------------------------------|-----------------------|--------------|---------------|-------------------------|---------------------------------------------|-----------------------------|-----------------------------------------------|
| | Whooping-cough..... | Typhoid fever..... | Tuberculous, abdominal..... | Tuberculous of the meninges..... | Tuberculous of the lungs..... | Tuberculous of the larynx..... | Syphilis..... | Scarlet fever..... | Rheumatism—chronic and gout..... | Rheumatism—acute articular..... | Purulent infection and septicæmia..... | Membranous croup..... | Measles..... | Leukæmia..... | Chronic poisonings..... | Cerebral softening..... | Other nervous diseases..... | Conjunctival and hæmorrhage of the brain..... |
| | | | | | | | | | | | | | | | | | | |
| Kingman..... | | | | | 2 | | | | | | | | | | | | | 2 |
| Kiowa..... | | | | | 3 | | 1 | | | | | | 1 | | | | | 1 |
| Labette..... | | | | | 4 | | | | | | | | | | | | | |
| Lane..... | | | | | | | | | | | | | | | | | | |
| Leavenworth..... | | | | | | | | | | | | | | | | | | |
| Lincoln..... | | | | | 4 | | | | 3 | 2 | | | | | | | | |
| Linn..... | | | | | 6 | | | | | | | | | | | | | |
| Logan..... | | | | | 4 | | | | | | | | | | | | | |
| Lyon..... | | | | | 24 | | | | | | | | | 1 | | | | 14 |
| Marion..... | | | | | 1 | | | | | | | | | | | | | |
| Marshall..... | | | | | | | | | | | | | | | | | | |
| McPherson..... | | | | | 6 | | 1 | 1 | | | | | | 4 | | | | 1 |
| Meade..... | | | | | | | | | | | | | | | | | | |
| Miami..... | | | | | 3 | | | | | | | | | 1 | | | 1 | 4 |
| Mitchell..... | | | | | 6 | | | | 4 | | | | | | | | | |
| Montgomery..... | 2 | | | | | 11 | | | | | | | | | | | | 2 |
| Morris..... | | | | | 7 | | | | | | | | | | | | | |
| Morton..... | | | | | | | | | | | | | | | | | | |
| Nemaha..... | | | | | 11 | | | | 2 | | | | | 1 | | | | 6 |
| Neosho..... | 5 | | | | 5 | | | | | | | | | | | | | |
| Ness..... | | | | | 1 | | | | | | | | | | | | | |
| Norton..... | | | | | 2 | | | | | | | | | | | | | |
| Osage..... | | | | | 16 | | | | 1 | | | | | | | | | |
| Osborne..... | | | | | 3 | | | | | | | | | | | | | 1 |
| Ottawa..... | | | | | 2 | | | | | | | | | | | | | 1 |
| Pawnee..... | | | | | | | | | 3 | 1 | | | | | | | | |
| Phillips..... | | | | | | | | | 2 | | | | | | | | | |
| Pottawatomie..... | | | | | 6 | | | | 1 | | | | | | | | | |
| Pratt..... | 1 | | | | 4 | | | | | | | | | | | | | 2 |
| Rawlins..... | | | | | 3 | | | | | | | | | | | | | 7 |
| Reno..... | | | | | | | | | | | | | | | | | | |
| Republic..... | | | | | 6 | | | | 5 | | | | | | | | | 1 |
| Rice..... | | | | | 5 | | | | 4 | | | | | | | | | 2 |
| Riley..... | | | | | 3 | | | | 1 | | | | | | | | | |
| Rooks..... | | | | | 1 | | | | | | | | | | | | | 1 |
| Rush..... | | | | | | | | | | | | | | | | | | |
| Russell..... | 1 | | | | 1 | | | | 1 | | | | | | | | | |
| Saline..... | | | | | | | | | | | | | | | | | | |
| Scott..... | | | | | 3 | | | | 1 | | | | | | | | | 2 |
| Sedgwick..... | | | | | | | | | 2 | | | | | | | | | 1 |
| Seward..... | | | | | 1 | | | | | | | | | | | | | 1 |
| Shawnee..... | | | | | | | | | | | | | | | | | | |
| Sheridan..... | | | | | | | | | | | | | | | | | | |
| Sherman..... | | 1 | | 1 | | | | | | | | | | | | | | |
| Smith..... | | | | | | | | | 3 | 1 | | | | | | | | |
| Stafford..... | | | | | | | | | | | | | | | | | | |
| Stanton..... | | | | | 6 | | | | | | | | | | | | | |

TABLE No. 5 — CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | |
|-------------|--------------------|----------|---------|------------------|-----------------------------------|-------------------------------|--------------------------------|---------------|----------|----------------------------|---------------------------|------------------------------|-------------------------|---------------|---------------------------------------------|----------------------------------------|--------------------|-----|
| | Chronic poisonings | Leukemia | Measles | Membranous croup | Purulent infection and septicemia | Rheumatism — acute, articular | Rheumatism — chronic, and gout | Scarlet fever | Syphilis | Tuberculosis of the larynx | Tuberculosis of the lungs | Tuberculosis of the meninges | Tuberculosis, abdominal | Typhoid fever | Whooping-cough | Congestion and hemorrhage of the brain | | |
| | | | | | | | | | | | | | | | | Other nervous diseases | Cerebral softening | |
| Stevens | | | | | 4 | | | 4 | | | 17 | | 2 | 1 | | | | |
| Sumner | | | | | | | | | | | 1 | | | 2 | | | | |
| Thomas | | | | | | | | | | | 2 | | | 2 | | | | |
| Trago | | | | 1 | | | | | | | | | | | | | | |
| Wabaunsee | | 1 | | | 4 | | | | | 4 | | | | | | | | 1 |
| Wallace | | | | | | | | | | | | | | 1 | | | | 1 |
| Washington | | | 3 | 1 | 3 | | 1 | | | 7 | | | | 5 | 2 | | | |
| Wichita | | | | | | | | | | 2 | | | | | | | | |
| Wilson | | 3 | 3 | | 3 | | | | | 4 | | | | 3 | | | 6 | 2 |
| Woodson | | 1 | | | | | | | | 9 | | | | 3 | 1 | | | |
| Wyandotte | | | 2 | | | | | | | 10 | | | | | | | | |
| Cities. | | | | | | | | | | | | | | | | | | |
| Coffeyville | | | | 1 | | | | | | | 25 | | 7 | 7 | | | | 3 |
| Kansas City | 1 | 1 | 31 | | 9 | 11 | 2 | 1 | 3 | | 140 | 4 | 11 | 67 | 25 | 5 | 5 | 32 |
| Leavenworth | | | | | 6 | | | | 1 | | 30 | | 1 | 7 | 2 | 2 | 2 | 11 |
| Topeka | 1 | | 3 | 1 | | 5 | | | 2 | | 46 | | 4 | 14 | 3 | 3 | 2 | 4 |
| Wichita | | 1 | | 2 | 7 | 2 | 1 | 3 | 3 | | 34 | | 3 | 14 | 3 | 1 | | 18 |
| Totals | 11 | 12 | 90 | 89 | 79 | 14 | 13 | 68 | 15 | 11 | 936 | 13 | 36 | 440 | 77 | 41 | 13 | 187 |

TABLE No. 5—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | | CIRCULATORY APPARATUS. | | | |
|-----------------|---------------------------------------------|-------------------------|---------------|-----------|--------------------|--------------------------|-------------|----------------|-----------|-----------------------------------|-------------------------------|------------------------------------|----------|--------------------------------------------|-------------------------|
| | Convulsions (not puerperal). | Convulsions of infants. | Encephalitis. | Epilepsy. | General paralysis. | Other forms of insanity. | Meningitis. | | | Paralysis without specific cause. | Progressive locomotor ataxia. | Other diseases of the spinal cord. | Tetanus. | Affections of the arteries, aneurism, etc. | Embolus and thrombosis. |
| | | | | | | | Simple. | Cerebrospinal. | Cerebral. | | | | | | |
| Allen..... | | | | | | | | 1 | | 3 | 1 | | | | 1 |
| Anderson..... | | | | | | | | | 4 | 15 | 1 | | | | |
| Atchison..... | | | | | | | | | | | | | | | |
| Barber..... | | | | | | | | | | | | | | | |
| Barton..... | 2 | 2 | | | 3 | | | | | | | | | | 1 |
| Bourbon..... | | 2 | | | | | | | | 21 | | | | | |
| Brown..... | | | | | 5 | | | | | 5 | | | | | |
| Butler..... | 1 | | | | | 2 | | 2 | | 7 | 1 | 1 | | 1 | 1 |
| Chase..... | 1 | 1 | | | | | | 1 | | | | | | | |
| Chautauqua..... | | 2 | | | | | | | | | | | | | |
| Cherokee..... | 3 | | | 1 | 9 | 4 | | 1 | | | | 1 | | | |
| Cheyenne..... | | 3 | | 1 | | | | | | 1 | | | | | |
| Clark..... | | | | | | | | | | 6 | | | | | |
| Clay..... | | | | | | | | 1 | | | | | | | |
| Cloud..... | | 2 | | | | | | | | | | | | | |
| Coffey..... | | | | | 10 | | | 2 | 2 | | | | | | |
| Comanche..... | | | | | | | | | | | | | | | |
| Cowley..... | 4 | | | 3 | 15 | | | 2 | 4 | | | | 1 | 1 | 1 |
| Crawford..... | 7 | 1 | | | 21 | 4 | | 1 | 4 | | | 3 | 1 | 1 | 3 |
| Decatur..... | | | | | | | | | | | | | | | |
| Dickinson..... | | 2 | | | | | 2 | | | 5 | | | | 1 | 1 |
| Doniphan..... | | 1 | 1 | 2 | | | 2 | | | 3 | | | | | |
| Douglas..... | | 9 | | 17 | | | 2 | | | | 1 | 1 | | 1 | |
| Edwards..... | | | | | | | 1 | | | | | | | | |
| Elk..... | | | | | | | | | | | | | | | |
| Ellis..... | | 2 | | 1 | 1 | | | | | | | | | | |
| Ellsworth..... | 1 | 1 | 1 | | | | | | 1 | 4 | 5 | | | | 1 |
| Finney..... | | | | | 5 | | | | | | | | | | |
| Ford..... | | | | | 6 | 2 | | | 1 | 1 | | | | 1 | 1 |
| Franklin..... | 1 | | | | 1 | | 1 | | | 1 | 19 | | | | 2 |
| Geary..... | | 3 | | | | | 8 | | | 7 | | | | | |
| Gove..... | | | | | | | | | | | | 1 | | | |
| Graham..... | | | | 1 | | | | | | | | | | | |
| Grant..... | | | | | | | | | | | | | | | 1 |
| Gray..... | | | | | 2 | | | | | | | | | | |
| Greeley..... | | | | | | | | | | | | | | | |
| Greenwood..... | 1 | 2 | | | 3 | | | 2 | 2 | | | | 1 | 1 | 1 |
| Hamilton..... | | | | | | | | | | | 1 | | | | |
| Harper..... | | 1 | | | 7 | | 1 | | | | | | | | |
| Harvey..... | | 1 | | | | | | | | 5 | | | | | |
| Haskell..... | | | | | | | | | | | | | | | |
| Hodgeman..... | | | | | | | | | | 2 | | | | | |
| Jackson..... | | | | | 5 | | | | | 5 | | | | | |
| Jefferson..... | | | | | 3 | 2 | | | | | | | | 1 | |
| Jewell..... | | | | | | | | 1 | | 1 | 1 | | | | |
| Johnson..... | 1 | | | | | 1 | | 1 | | 1 | 3 | | | 5 | 1 |
| Kearny..... | | | | | | | | | | | 1 | 1 | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | CIRCULATORY APPARATUS. | | | | |
|------------------------|---------------------------------------------|----------------------------------|------------------------|--------------------|-----------------------------|-----------------------------------|-------------------|-------------------------|--------------------|--------------------------------------------|----------------------------------------|---------------------------------------------|-------------------|------------------------------------------------------|----------------------------------|
| | Convulsions (not puerperal) | Convulsions of infants | Encephalitis | Epilepsy | General paralysis | Other forms of insanity | Meningitis. | | | Paralysis without specific cause | Progressive locomotor ataxia | Other diseases of the spinal cord | Tetanus | Affectations of the arteries, aneurism, etc. | Embolus and thrombosis |
| | | | | | | | Stimple | Cerebrospinal | Cerebral | | | | | | |
| Kingman | | | 1 | | | | 2 | | | | | | | 1 | |
| Kiowa | | | | | | | | | | | | | | | |
| Labette | | | | | | | | | | | | | | | |
| Lane | | | | | 1 | 1 | 1 | | | 3 | | | | | |
| Leavenworth | | | | 1 | | 1 | 1 | | | 3 | | | | | |
| Lincoln | 1 | | | | 3 | | 1 | | | | | | | | 2 |
| Linn | | | | | | | | | 1 | 2 | | | | | 1 |
| Logan | | | | | | | | | | | | | | | |
| Lyon | 1 | | | 1 | 10 | | 5 | | | | | | | | |
| Marion | | | | | | | | | | | | 2 | | | 1 |
| Marshall | | | | 1 | 7 | 1 | | | 1 | 3 | | | | 1 | 1 |
| McPherson | | | 1 | | 1 | | | 2 | | 3 | | 1 | | | |
| Meade | | | | | | | | | | | | | | | |
| Miami | | | | | 3 | 1 | | | | | | | | | |
| Mitchell | | | | 1 | 7 | 1 | | | 1 | | | | | 3 | |
| Montgomery | 5 | 7 | | | 7 | | 3 | | | | | | | | |
| Morris | | | | | 3 | | | | | | | | | 2 | 1 |
| Morton | | | | | | | | | | | | | | | |
| Nemaha | 1 | | 1 | 1 | 4 | | 3 | | 1 | 1 | | 1 | | | 1 |
| Neosho | | | | | 5 | | | | 1 | | | | | | |
| Ness | | 1 | | | | | | | | | | | | | |
| Norton | | | | | 1 | | | | | 1 | | | | | |
| Osage | | | | 3 | | | 4 | | | 1 | | 16 | | | |
| Osborne | | | | | | | 1 | | | | | | | | 3 |
| Ottawa | | | | | 4 | | | | 1 | | | | | | |
| Pawnee | | | | | | | | | | | | | | | |
| Phillips | | 1 | | | | | 1 | 1 | | | | | | | 1 |
| Pottawatomie | | 1 | | | 1 | | 2 | | | 2 | | | | 1 | 1 |
| Pratt | | | | | | | | | | 2 | | | | | 1 |
| Rawlins | | | | | 2 | | | 1 | | 1 | | | | | 1 |
| Reno | | | | | 3 | | | | 1 | | | | | | 1 |
| Republic | | | | 1 | 2 | | 1 | | | | | 1 | | | |
| Rice | | | | | | | | | | | | | | | |
| Riley | | | | | | | | | | | | | | 2 | |
| Rooks | | | | | 2 | | 2 | | 1 | 2 | | | | | 3 |
| Rush | | | | | | | | | | | | 1 | | | |
| Russell | | | | | 4 | | | | | 1 | | | | | 1 |
| Saline | | | | | 5 | | 1 | | | 6 | | 1 | 1 | | |
| Scott | | | | | | | | | | | | | | | |
| Sedgwick | | | | 1 | 1 | | | | 1 | | | | | | |
| Seward | | | | | | | | | | | | | | | |
| Shawnee | | | | | | | | | | 1 | 1 | | | | |
| Sheridan | | | | | | | | | | | | | | | |
| Sherman | | | | 1 | | | | 9 | | | | | | | |
| Smith | | 2 | | 1 | 3 | | | | | | | | | | 1 |
| Stafford | | | | 1 | | | 1 | | | | | | | 1 | 1 |
| Stanton | | | | | | | | | | 9 | | | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | | | CIRCULATORY APPARATUS. | | | |
|------------------|---------------------------------------------|------------------------|--------------|----------|-------------------|-------------------------|-------------|---------------|----------|--------|----------------------------------|------------------------------|-----------------------------------|---------|--------------------------------------------|------------------------|
| | Convulsions (not puerperal) | Convulsions of infants | Encephalitis | Epilepsy | General paralysis | Other forms of insanity | Meningitis. | | | | Paralysis without specific cause | Progressive locomotor ataxia | Other diseases of the spinal cord | Tetanus | Affections of the arteries, aneurism, etc. | Embolus and thrombosis |
| | | | | | | | Simple | Cerebrospinal | Cerebral | Spinal | | | | | | |
| | | | | | | | | | | | | | | | | |
| Stevens..... | | | | | | | 1 | | | | 1 | 8 | | | | |
| Sumner..... | 2 | | | | | | 2 | | | | 2 | | | | | |
| Thomas..... | 1 | | | | 1 | | | | | | | | | | | |
| Trego..... | | | | | | | | | | | | | | | | |
| Wabaunsee..... | | | | | | | 1 | | | | 4 | 1 | | | | |
| Wallace..... | 1 | | | | | | | | | | | | | | | |
| Washington..... | | | | | | | 1 | | | 17 | | | | | 1 | 1 |
| Wichita..... | | | | | | | | | | | | | | | | |
| Wilson..... | | | | 1 | 2 | | | | | | | | | | 1 | |
| Woodson..... | | 1 | | | 4 | | | | | | | | | | 4 | |
| Wyandotte..... | 1 | 2 | | | 2 | | | | | | | | | | | |
| <i>Cities.</i> | | | | | | | | | | | | | | | | |
| Coffeyville..... | 1 | | | | 7 | | | | | 1 | | 1 | | | | |
| Kansas City..... | 7 | 2 | 7 | 15 | 11 | 19 | 2 | | 2 | 2 | 4 | 13 | 2 | 4 | 5 | 1 |
| Leavenworth..... | 4 | | 1 | | | 2 | 2 | | 2 | 4 | 13 | 2 | 4 | | 1 | 5 |
| Topeka..... | 4 | 6 | 2 | 3 | 7 | 5 | 4 | 11 | 3 | 19 | | 3 | | 3 | 1 | |
| Wichita..... | 2 | | | | | 5 | | | 2 | 11 | 1 | | | 2 | 1 | 1 |
| Totals..... | 34 | 72 | 10 | 33 | 226 | 28 | 94 | 34 | 20 | 40 | 242 | 14 | 18 | 10 | 32 | 39 |

TABLE No. 5—CONTINUED.

| COUNTIES. | CIRCULATORY APPARATUS. | | | | RESPIRATORY SYSTEM. | | | | | | | | DIGESTIVE APPARATUS. | | | | |
|------------|------------------------|--------------|-------------------------------------------|-------------------------|---------------------|---------|-------------------|---------------------|---------------------------------------------------------|-----------|------------|------------------------------------------------------------------|-----------------------------------------------|------------------|--------------------------------|-------------------------|--------------------------------------------|
| | Endocarditis. | Hemorrhages. | Other diseases of the circulatory system. | Organic heart diseases. | Acute bronchitis. | Asthma. | Bronchopneumonia. | Chronic bronchitis. | Congestion of the lungs (including pulmonary apoplexy). | Pleurisy. | Pneumonia. | Other diseases of the respiratory apparatus (phthisis excepted). | Appendicitis and abscess of the iliac fossae. | Biliary calculi. | Other affections of the liver. | Cirrhosis of the liver. | Diarrhea and enteritis (under five years). |
| Allen | | | | 12 | | 1 | | | | | 5 | | | | 1 | 1 | 5 |
| Anderson | | | | 24 | | | | | | | 23 | 1 | | | 3 | | 1 |
| Atchison | | 5 | | 1 | | | | | | | 5 | | | 1 | | | 9 |
| Barber | | | | 11 | 1 | 1 | | | | | | | | | | | |
| Barton | 1 | | | | | | | | | | | | | | | | |
| Bourbon | | | | 19 | | | | 2 | | | 28 | 8 | 3 | | | 1 | 2 |
| Brown | | | | 8 | | | | | | | 6 | | 2 | | | | |
| Butler | | 5 | 4 | 15 | | 2 | | | | | 13 | 5 | 1 | 1 | 1 | | 7 |
| Chase | | | | 1 | | | 2 | | | | 1 | | 1 | | | | 2 |
| Chautauqua | | | | 1 | | | | | | | | | 1 | | | | |
| Cherokee | | | 2 | 22 | 3 | 5 | | | 2 | 1 | 54 | 2 | 3 | | 6 | 2 | 1 |
| Cheyenne | | | | 3 | | 1 | | | 1 | | 2 | | 1 | | | | 2 |
| Clark | | | | | | | | | | | | | | | | | 1 |
| Clay | | 3 | | 8 | | | | | | | 7 | | | | | | 2 |
| Cloud | | 1 | | 2 | | | | | | | | | | | | | |
| Coffey | | | | 16 | | 2 | | 1 | 1 | | 12 | | | 1 | 2 | | 1 |
| Comanche | | | | | | | 4 | | | | 2 | | 6 | | | | 12 |
| Cowley | | 1 | 1 | 25 | 1 | | | 1 | | | 21 | | 8 | 8 | 2 | 1 | 24 |
| Crawford | | 5 | | 28 | 4 | 6 | | | | 1 | 31 | | | | | | 1 |
| Decatur | | | | | | | | | | | 2 | | | | | | |
| Dickinson | | 1 | | 20 | 1 | 1 | 1 | | | | 21 | | 1 | | | | 7 |
| Doniphan | | | | 8 | 2 | 1 | 1 | 3 | | | 10 | | | 1 | 1 | | 3 |
| Douglas | 2 | | | | 2 | 3 | 5 | | | | 9 | | 3 | | | 1 | 2 |
| Edwards | | | | 5 | 2 | | | | | | 4 | | 2 | | | | |
| Elk | | | | | | | 6 | | | | 13 | | | | | | |
| Ellis | 2 | | | 3 | | | | | | | 4 | | 2 | | | | 30 |
| Ellsworth | 1 | | | 11 | | 1 | | | 1 | | 6 | | 2 | | | | 6 |
| Finnery | | | | | | | | | | | 3 | | | | | 1 | 9 |
| Ford | | | | 7 | | | 1 | | | | 1 | | | 1 | | | 6 |
| Franklin | | 7 | | 19 | | | | 1 | | 1 | 16 | | 3 | | | 1 | 10 |
| Geary | | | | 8 | | 2 | | | | | 15 | | 2 | | | | 3 |
| Gove | | | 1 | 4 | | | | | | 1 | 3 | | 1 | | | | 5 |
| Graham | | | | 5 | | | | | | | | | | | | | |
| Grant | | | | | | | | | | | | | | | | | |
| Gray | | 1 | 1 | | | | | | | | | | | | | | |
| Greeley | | | | | | | | | | | 3 | | | | | | |
| Greenwood | | 2 | | 5 | 1 | 1 | 5 | | 1 | | | | | | | | 7 |
| Hamilton | | | 1 | 4 | | | | | | | 1 | | | | | | 2 |
| Harper | | | | 8 | | | | | | | 2 | | 1 | | | | |
| Harvey | | 1 | | 16 | | | | | | | 7 | | 5 | | | | |
| Haskell | | | | 1 | | | | | | | | | | | | | |
| Hodgeman | | | | | | | 1 | | | | 2 | | | | | | |
| Jackson | | | | 14 | | | | | | | 10 | | 1 | | 1 | | 2 |
| Jefferson | | | | 8 | | | | | | | 11 | | 2 | | | | |
| Jewell | 2 | | 1 | | | | | | | | 8 | | 1 | | | | 6 |
| Johnson | 3 | | 1 | 2 | | 1 | | | | | 6 | | | | | | |
| Kearny | | | | | | | | | | | | | | | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | CIRCULATORY APPARATUS. | | | RESPIRATORY SYSTEM. | | | | | | | | | DIGESTIVE APPARATUS. | | | | |
|-------------------|------------------------|------------------|-----------------------------------------------|------------------------------|-----------------------|-------------|-----------------------|-------------------------|-------------------------------------------------------------|----------------|----------------|----------------------------------------------------------------------|----------------------------------------------------|----------------------|-------------------------------------|------------------------------|--------------------------------------------------|
| | Endocarditis..... | Hemorrhages..... | Other diseases of the circulatory system..... | Organic heart diseases | Acute bronchitis..... | Asthma..... | Bronchopneumonia..... | Chronic bronchitis..... | Congestion of the lungs (including pulmonary apoplexy)..... | Pleurisy | Pneumonia..... | Other diseases of the respiratory apparatus (phthisis excepted)..... | Appendicitis and abscesses of the iliac fossa..... | Biliary calculi..... | Other affections of the liver | Cirrhosis of the liver | Diarrrhoea and enteritis (under five years)..... |
| Kingman..... | | | | 2 | | | | | | | 2 | | | | | | 2 |
| Kiowa..... | | | | 6 | | | | | | | 6 | | | | 2 | | |
| Labette..... | | | | 1 | | | | | 2 | | 2 | | | | | | |
| Lane..... | | | | 7 | | | 3 | 1 | | | 7 | | | | | | |
| Leavenworth..... | 6 | | | | | 2 | | | | | | | 1 | | | | |
| Lincoln..... | | | | 3 | | | | | | | 5 | | 3 | | | | 5 |
| Linn..... | | | 1 | 2 | | | 6 | | | | 2 | | | | | | |
| Logan..... | | | | | | | | | | | 3 | | 1 | | | | |
| Lyon..... | | | 1 | 29 | 1 | 2 | | 1 | | 1 | 33 | | 3 | | 1 | | 4 |
| Marion..... | 2 | 1 | | 9 | | | | | | | 6 | | | | | | 1 |
| Marshall..... | 1 | | | 9 | | 2 | 5 | | 1 | 1 | 3 | | 1 | | | 1 | 5 |
| McPherson..... | | 1 | | 5 | 1 | 1 | | | | | 3 | | | | | | |
| Meade..... | 1 | | | 1 | | | | | | | 2 | | 1 | 1 | | | |
| Miami..... | | | | 11 | | | | | | | 4 | | | | | | |
| Mitchell..... | | 2 | | 7 | | 1 | | | | | 14 | | | | 1 | | 2 |
| Montgomery..... | | 5 | | 7 | 8 | 2 | | | | | 9 | | | | 1 | | 2 |
| Morris..... | | 1 | | 6 | | | | | | | 9 | | 1 | | | | 9 |
| Morton..... | | | | | | | | | | | | | | | | | 1 |
| Nemaha..... | | | | 27 | | | | | 4 | 1 | 17 | | 1 | 1 | | | 3 |
| Neosho..... | | | | 5 | 1 | 1 | 8 | | 5 | | 2 | | 1 | | 1 | 1 | 2 |
| Ness..... | | | | 1 | | | | | | | | | | | | 1 | |
| Norton..... | | | | 1 | | | | | | | 3 | | | | | | 3 |
| Osage..... | | 3 | | 31 | 1 | 2 | | | | | 12 | | 3 | | 3 | | 6 |
| Osborne..... | | | | | | | | 1 | | | | | | | | | |
| Ottawa..... | | | | 5 | | | | | | | 2 | | | | | | 2 |
| Pawnee..... | | | | | | | | | | | 4 | 2 | | | | | |
| Phillips..... | | | | 7 | | 1 | | 1 | | | 12 | | | | 3 | | |
| Pottawatomie..... | | 1 | 1 | 3 | | | 2 | | | | 11 | 1 | | 1 | 1 | 1 | 1 |
| Pratt..... | | | 2 | | | | | | | | 3 | | | | | | |
| Rawlins..... | | 1 | | 3 | | | 1 | | | | 1 | | | | | | |
| Reno..... | | | 2 | | | | 1 | | | | 9 | 3 | 1 | | | | |
| Republic..... | | | | 5 | 2 | 2 | 1 | | | | 16 | | 2 | 2 | | | 5 |
| Rice..... | | | | | | | | | | | | | | | | | |
| Riley..... | 1 | 1 | | | 2 | 1 | 2 | | 3 | | 4 | | 4 | | | 2 | 4 |
| Rooks..... | 2 | | | 3 | | | | | | | 3 | | 1 | | | | 2 |
| Rush..... | | | | 3 | 4 | | 4 | 3 | 2 | | | | | | | | |
| Russell..... | | 2 | | 5 | | | | | 1 | | 6 | | 3 | | | 4 | |
| Saline..... | | 1 | | 19 | 1 | | | | | 1 | 18 | 1 | 2 | | 2 | 2 | 1 |
| Scott..... | | | | 1 | | 1 | | | | | | | | | | | |
| Sedgwick..... | | | | 4 | | | | | 1 | | 4 | | 2 | | | | 1 |
| Seward..... | | | | 2 | | | | | | | 1 | | | | | | 3 |
| Shawnee..... | | | | 12 | | | | 1 | | | 3 | | | | | | |
| Sheridan..... | | | 4 | 1 | | | | | | | 3 | | | | | | |
| Sherman..... | | | | 5 | | | 1 | | | | 2 | | | | | | 2 |
| Smith..... | 4 | | | 2 | 4 | 1 | | | | 2 | 6 | | 2 | | | | 6 |
| Stafford..... | | | | 2 | | | | | | | 2 | | 7 | 1 | | | 1 |
| Stanton..... | | | | | | | | | | | | | | | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | CIRCULATORY APPARATUS. | | | RESPIRATORY SYSTEM. | | | | | | | DIGESTIVE APPARATUS. | | | | | | |
|--------------|------------------------|--------------|-------------------------------------------|-------------------------|-------------------|---------|-------------------|---------------------|---------------------------------------------------------|-----------|----------------------|------------------------------------------------------------------|----------------------------------------------|------------------|--------------------------------|-------------------------|--------------------------------------------|
| | Endocarditis. | Hemorrhages. | Other diseases of the circulatory system. | Organic heart diseases. | Acute bronchitis. | Asthma. | Bronchopneumonia. | Chronic bronchitis. | Congestion of the lungs (including pulmonary apoplexy). | Pleurisy. | Pneumonia. | Other diseases of the respiratory apparatus (phthisis excepted). | Appendicitis and abscess of the iliac fossa. | Biliary calculi. | Other affections of the liver. | Cirrhosis of the liver. | Diarrhea and enteritis (under five years). |
| Stevens. | | | | 2 | | | | | | | | | | | | 1 | 2 |
| Sumner. | 5 | | | 14 | | | 4 | | | | 10 | | 1 | | | | 2 |
| Thomas. | 1 | | | 2 | | | | | | | 7 | | | 1 | | | |
| Trego. | | | | 3 | | | | | | | 2 | | | | | 1 | |
| Wabunsee. | | | | 3 | | | | | | | 4 | | 1 | | | 2 | 2 |
| Wallace. | | | | | | | | | 1 | | | | | | | | |
| Washington. | 1 | | | 3 | | | 1 | | | | 14 | 1 | | 1 | 1 | 1 | 5 |
| Wichita. | | | | 1 | | | | | | | | | | 1 | | | 1 |
| Wilson. | | | | 8 | | | 4 | 2 | 1 | 1 | 8 | | 1 | | | | |
| Woodson. | | | | 10 | | 1 | 1 | | | | 3 | | | | | | |
| Wyandotte. | | | | 3 | 2 | | | | 1 | | 17 | | | | | 2 | 5 |
| Cities. | | | | | | | | | | | | | | | | | |
| Coffeyville. | | | 1 | 13 | 1 | 1 | | | | | 11 | | 1 | 1 | 1 | | 2 |
| Kansas City. | 11 | 2 | | 55 | 7 | 3 | 30 | 13 | 1 | 2 | 108 | 2 | 11 | 2 | 8 | 8 | 66 |
| Leavenworth. | 1 | 3 | | 30 | | 9 | 3 | | | | 36 | | | | | | 10 |
| Topeka. | | 8 | | 12 | 65 | 1 | 2 | 2 | 2 | | 37 | | 6 | 2 | 4 | | 11 |
| Wichita. | | | 20 | 13 | 3 | | 24 | | 2 | 3 | 21 | | 8 | 1 | 2 | 6 | 16 |
| Totals. | 46 | 66 | 54 | 819 | 51 | 63 | 132 | 33 | 30 | 15 | 904 | 29 | 120 | 26 | 51 | 50 | 358 |

TABLE No. 5—CONTINUED.

| COUNTIES. | DIGESTIVE APPARATUS. | | | | | | GENITO-URINARY APPARATUS AND ITS ADNEXA. | | | | | | PUERPERAL STATE. | | | | |
|-----------------|-----------------------------------------------|----------------------------------------|----------------------------------------|---------------------------|----------------------------------|---------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|----------------------|------------------------|-----------------------------------------------------|-----------------------------------|------------------------------|-------------------------------|------------------------------|---------------------------|-------------------------------|
| | Diarrhea and enteritis (over five years)..... | Hernia and intestinal obstructions.... | Other affections of the intestines.... | Intestinal parasites..... | Peritonitis (not puerperal)..... | Other affections of digestive apparatus (except cancer and tubercle)..... | Ulcer of the stomach..... | Other affections of the stomach (cancer excepted)..... | Acute nephritis..... | Bright's disease | Other diseases of the kidneys and their adnexa..... | Calculi of the urinary tract..... | Diseases of the bladder..... | Diseases of the prostate..... | Accidents of pregnancy | Puerperal hemorrhage..... | Other accidents of labor..... |
| Allen | | | | | | | | | | 4 | | | | | | | |
| Anderson..... | 1 | 1 | | | | | | | | 7 | | | | | | | |
| Atchison..... | | | 1 | | | 4 | 2 | 1 | | 7 | | | | | | | |
| Barber..... | | | | | | | | 1 | | | | | | | | | |
| Barton..... | | 3 | | | | 1 | | | 2 | | | | | | | | 2 |
| Bourbon..... | | | 4 | | 5 | 5 | | 13 | 1 | 3 | 4 | | | | | | 3 |
| Brown..... | | | | | | | | 1 | | | 2 | | | | | | |
| Butler..... | | | | | | | 1 | 2 | 2 | 11 | | | 1 | | | | |
| Chase..... | | | | | | | | 1 | | | 2 | | | | | | |
| Chautauqua..... | | | | | | | | | | | | | | 1 | 1 | | 1 |
| Cherokee..... | 5 | | 12 | | 2 | 6 | 1 | 12 | 2 | 4 | 5 | 5 | 2 | | | 8 | |
| Cheyenne..... | | | | | | | | | | | | | | | 1 | | |
| Clark..... | | | | | | | | | | 2 | | | | | | | |
| Clay..... | 3 | | 3 | | 1 | | | 1 | 3 | | | 1 | | | 2 | | |
| Cloud..... | | | | | | | | | | | | | | | | | |
| Coffey..... | 1 | | | | | 2 | | 7 | 2 | 7 | 1 | | | | 1 | | 1 |
| Comanche..... | | | | | | | | | 1 | | | | | | | | |
| Cowley..... | | 3 | 3 | | 3 | 1 | | 5 | 1 | 8 | | | | | | | |
| Crawford..... | | 1 | 3 | | 4 | 1 | 1 | 45 | 1 | 4 | 11 | | | | 4 | | |
| Decatur..... | | | | | 1 | | | | 1 | | | | | | | | |
| Dickinson..... | | 1 | | | 1 | | | | | 4 | | | | 3 | 1 | 1 | |
| Doniphan..... | | | | | 1 | | | 1 | | 5 | | | 1 | | | | |
| Douglas..... | | | | | | | | | | 4 | 1 | | | | | | |
| Edwards..... | 2 | 1 | | | | | | | 1 | 2 | 1 | | 1 | | | | |
| Elk..... | | | | | | | | | 1 | | | | | | | | |
| Ellis..... | 1 | 2 | | | | | | 3 | 1 | 5 | | | | | | 1 | |
| Ellsworth..... | | | | | 3 | | | | | 2 | 1 | | | | | | |
| Finney..... | | | | | 1 | | | | | 4 | | | | | 1 | | |
| Ford..... | | 1 | | | 1 | | | 2 | | 4 | | | | | | 1 | |
| Franklin..... | 1 | 1 | | | 1 | | 1 | | 15 | | | | | | | | 1 |
| Geary..... | | | | | 2 | | | | | 4 | | | | | | | |
| Gove..... | | | | | | | | | | | 1 | | | | | | |
| Graham..... | | | | | | | | | 1 | 2 | | | | | 1 | | |
| Grant..... | | | | | | | | | | | | | | | | | |
| Gray..... | | | | | | | | | | 2 | | | | | | | |
| Greeley..... | | | | | | | | | | | | | | | | | |
| Greenwood..... | | | | | | | | | 5 | 5 | | | | | 3 | | |
| Hamilton..... | | | | | | | 1 | | | | | | | | | | |
| Harper..... | | 1 | | | 3 | | | | | 10 | | | | | 1 | | |
| Harvey..... | | | | | | 4 | | 10 | | 3 | 3 | | | | | | |
| Haskell..... | | | | | | | | | | | | | | | | | |
| Hodgeman..... | | | | | | | | | | | | | | | | | |
| Jackson..... | | | | | | 2 | | | | 3 | | | 2 | | 2 | 1 | |
| Jefferson..... | | 1 | | | | | | | | 1 | | | | 1 | 1 | | |
| Jewell..... | | 1 | | | | | | | 1 | | | | | | | | |
| Johnson..... | 2 | | | | | | | | | | | | | | | | |
| Kearny..... | | | | | | | | | | | | | | | | | |

TABLE No 5 - CONTINUED.

| COUNTIES. | DIGESTIVE APPARATUS. | | | | | | | GENITO-URINARY APPARATUS AND ITS ADNEXA. | | | | | PUERPERAL STATE. | | | | |
|-------------------|-----------------------------------------------|----------------------------------------|---------------------------------------|---------------------------|----------------------------------|-----------------------------------------------------------------------|---------------------------|--------------------------------------------------------|----------------------|-----------------------|-----------------------------------------------------|-----------------------------------|-------------------------------|------------------------------|-----------------------------|---------------------------|-------------------------------|
| | Diarrhea and enteritis (over five years)..... | Hernia and intestinal obstructions.... | Other affections of the intestines... | Intestinal parasites..... | Peritonitis (not puerperal)..... | Other affections of digestive apparatus (except cancer and tubercle). | Ulcer of the stomach..... | Other affections of the stomach (cancer excepted)..... | Acute nephritis..... | Bright's disease..... | Other diseases of the kidneys and their adnexa..... | Calculi of the urinary tract..... | Diseases of the prostate..... | Diseases of the bladder..... | Accidents of pregnancy..... | Puerperal hemorrhage..... | Other accidents of labor..... |
| Kingman..... | | | | | | | | | 1 | 3 | | | | | | | |
| Kiowa..... | | | | | | | | 2 | 2 | 1 | | | 1 | | | | |
| Labette..... | | | | | 1 | | | 1 | 2 | | | | | | | | |
| Lane..... | | | | | | | | 2 | 5 | 2 | | | | | | 1 | |
| Leavenworth..... | 3 | 1 | | | | | | 2 | | | | | | | | | |
| Lincoln..... | | 1 | | | 3 | | | | 4 | | | | | | | | |
| Linn..... | | | | | | | | | 1 | 1 | | | | | | | |
| Logan..... | | 1 | | | | | | 3 | | | | | | | 1 | | |
| Lyon..... | | 3 | | | 3 | | | 1 | 3 | 10 | | | 2 | | | | |
| Marion..... | 5 | 2 | | | 1 | | 4 | 1 | 3 | | | | | | | | |
| Marshall..... | 1 | | | 2 | | | 2 | | 2 | 6 | 2 | | | | | | |
| McPherson..... | | | | | 1 | | | | 2 | 3 | 1 | | | | | | |
| Meade..... | | 1 | | | | | | | | | | | | | | 1 | |
| Miami..... | | | 2 | | | | | 2 | | 1 | | | | | | | 1 |
| Mitchell..... | | | | | | | | 4 | | 3 | 3 | | | | | | |
| Montgomery..... | | 2 | | | 5 | | | | 5 | | | | 1 | | | | |
| Morris..... | | | | 1 | | | | | | 4 | | | | 1 | | | |
| Morton..... | | | | | | | | | | | | | | | | | |
| Nemaha..... | | 5 | | | 2 | 4 | | | 2 | 3 | 2 | | | 3 | 1 | | 3 |
| Neosho..... | | 1 | | | 3 | | | 2 | 1 | 3 | | | | | 2 | | |
| Ness..... | | | | | | | | | | 1 | | | | | | | |
| Norton..... | | | | | | 1 | | | | | | 1 | | | | | |
| Osage..... | 1 | 5 | | | 2 | | | 2 | 2 | 3 | 1 | | 1 | | 1 | | |
| Osborne..... | | | | | | | | | | | | | | | | | |
| Ottawa..... | | | | | | | | | 1 | 7 | 1 | | | | | 1 | |
| Pawnee..... | | | | | 1 | | 1 | | | 2 | | | | 1 | | | |
| Phillips..... | | 1 | | | | | | 1 | 1 | | 2 | | | | 1 | | |
| Pottawatomie..... | | 1 | | | 3 | | | 1 | 1 | 3 | | | | | | | |
| Pratt..... | 6 | | | | | | 1 | 2 | | | | | | | | | |
| Rawlins..... | | | | | | | | | | 2 | | | 1 | 1 | 1 | | |
| Reno..... | | 2 | | | 2 | | | | 2 | 7 | 3 | | | | | | |
| Republic..... | 2 | | 1 | | 1 | | 1 | | | 6 | | | 1 | | | 1 | |
| Rice..... | | | | | | | | | | | | | | | | | |
| Riley..... | 2 | | | | 7 | | | | 4 | 3 | | | | 1 | 2 | | |
| Rooks..... | | | | | | 2 | 4 | | | 3 | | | | 1 | 1 | | 1 |
| Rush..... | | | | | | | | | | 3 | | | 2 | | | | |
| Russell..... | | | 1 | 1 | | | 1 | | | | | | | | | | |
| Saline..... | 1 | 1 | 2 | | 3 | | | 3 | | 7 | | | | | 1 | 1 | |
| Scott..... | | | | 1 | | | | | | | | | | | | | |
| Sedgwick..... | | | | | 1 | | | | | 3 | | | | | | | |
| Seward..... | | | | | | | | | | | | | | | | | |
| Shawnee..... | | | | | | | 1 | | | 11 | | | | | | | |
| Sheridan..... | | | | | 1 | | | | 1 | 1 | | | 1 | | | | |
| Sherman..... | 1 | | | | 1 | | | | | 2 | 2 | | | | 1 | | |
| Smith..... | 3 | 1 | | | | | 2 | | 1 | 4 | | | | 1 | | 1 | |
| Stafford..... | | | | | | | | | 1 | 1 | | | | | 1 | | |
| Stanton..... | | | | | | | | | | | | | | | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | DIGESTIVE APPARATUS. | | | | | | | GENITO-URINARY APPARATUS AND ITS ADNEIA. | | | | | PUERPERAL STATE. | | | | |
|------------------|-----------------------------------------------|----------------------------------------|----------------------------------------|---------------------------|----------------------------------|---------------------------------------------------------------------------|---------------------------|--------------------------------------------------------|----------------------|-----------------------|-----------------------------------------------------|-----------------------------------|------------------------------|-------------------------------|-----------------------------|---------------------------|-------------------------------|
| | Diarrhoe and enteritis (over five years)..... | Hernia and intestinal obstructions.... | Other affections of the intestines.... | Intestinal parasites..... | Peritonitis (not puerperal)..... | Other affections of digestive apparatus (except cancer and tubercle)..... | Ulcer of the stomach..... | Other affections of the stomach (cancer excepted)..... | Acute nephritis..... | Bright's disease..... | Other diseases of the kidneys and their adnexa..... | Calculi of the urinary tract..... | Diseases of the bladder..... | Diseases of the prostate..... | Accidents of pregnancy..... | Puerperal hemorrhage..... | Other accidents of labor..... |
| Stevens..... | | | | | 2 | | | | | 1 | | | | | 1 | 1 | |
| Sumner..... | | 1 | | | | | | | | 3 | | | | | | 1 | |
| Thomas..... | | | | | | | | | | 1 | | | | | | | |
| Trego..... | | | | | | | | | 1 | 1 | | | | | | | |
| Wabaunsee..... | | 1 | | | | | 1 | | | 6 | | | | | | | |
| Wallace..... | | | | | | | | | | | | | | | | | |
| Washington..... | | | | | 2 | | | 3 | 3 | 6 | | | | 1 | | | |
| Wichita..... | 1 | | | | 2 | | | | 1 | | | | | | | | |
| Wilson..... | | | | | | | 1 | | | 3 | | | | | | | 2 |
| Woodson..... | 1 | 2 | | | | | | | 1 | 4 | 1 | | | | 2 | | |
| Wyandotte..... | 1 | | | | | | 1 | 2 | 1 | 5 | | | | | | | |
| <i>Cities.</i> | | | | | | | | | | | | | | | | | |
| Coffeyville..... | 2 | | | | 1 | | | 10 | 1 | | | | 1 | | 1 | | |
| Kansas City..... | 4 | 11 | 5 | 1 | 10 | 1 | | 15 | 8 | 32 | 3 | 2 | 2 | 5 | 1 | | |
| Leavenworth..... | 5 | | | | 8 | | 1 | 4 | 4 | 20 | | | 2 | | 1 | | 1 |
| Topeka..... | 1 | 4 | | 4 | 15 | 5 | 3 | 22 | 2 | 16 | 7 | | 1 | | | | 1 |
| Wichita..... | 8 | 9 | 4 | | 9 | | 2 | 3 | 3 | 21 | 8 | | 2 | 1 | | | |
| Totals..... | 64 | 73 | 41 | 10 | 137 | 23 | 32 | 197 | 91 | 404 | 90 | 10 | 32 | 14 | 57 | 16 | 22 |

TABLE No. 5—CONTINUED.

| COUNTIES. | PUERPERAL STATE. | | SKIN AND CELLULAR TISSUE—Gangrene, etc. | MALFORMATIONS (congenital). | EARLY INFANCY. | | OLD AGE—Senile debility..... | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | |
|-----------------|----------------------------------------|-----------------------|-----------------------------------------|-----------------------------|--------------------------------------|--------------------------------------------------------------------|------------------------------|------------------------------|--------------------------|------------------|-------------------------|-----------------------------|-----------------------------|----------------|--------------------------------|----|
| | Puerperal albuminuria and convulsions. | Puerperal septicæmia. | | | Lack of care, malnutrition, etc..... | Congenital debility, jaundice and scelerema (premature birth)..... | | Acute poisoning..... | Accidental drowning..... | Fire (burn)..... | Hot liquid (scald)..... | Fractures of the skull..... | Fractures of the femur..... | Inanition..... | Other accidental injuries..... | |
| Allen..... | | | | | | | 13 | | | | | | | | | |
| Anderson..... | | | | | | 2 | 24 | 3 | 1 | | | | | 1 | | |
| Atchison..... | | | | | 1 | | 1 | | | | | | | | | |
| Barber..... | | | | | | | 18 | | 1 | 2 | | | | | 1 | |
| Barton..... | | | | | | | | | | | | | | | | |
| Bourbon..... | | | | | | | 27 | 3 | 2 | | | 1 | | | 10 | |
| Brown..... | | | | | | | | | | | | | | | | |
| Butler..... | | 1 | 1 | 1 | | 1 | 4 | 15 | 3 | | | 1 | 1 | | 2 | |
| Chase..... | | | | | | 2 | | 3 | 2 | 1 | | | | | | |
| Chautauqua..... | | | | | 1 | 1 | | 1 | 1 | 1 | | | 1 | | | |
| Cherokee..... | 1 | | 4 | | | 13 | | 5 | 1 | | | | | | | |
| Cheyenne..... | | | | | | | | 2 | 1 | 1 | | | | | | |
| Clark..... | | | | 1 | 2 | | 2 | 1 | 1 | | | | | | 1 | |
| Clay..... | | | | | 1 | | | 11 | | | 1 | | | | | |
| Cloud..... | | | | | | | | | | | 1 | | | | | |
| Coffey..... | | 1 | | 1 | | 10 | | 12 | 11 | | | 1 | | | | |
| Comanche..... | 2 | | | | | | | 2 | 2 | 1 | | | | | | |
| Cowley..... | 3 | 2 | | 2 | | 4 | 26 | 17 | 2 | 2 | | | 1 | 2 | | |
| Crawford..... | 1 | 1 | 1 | 1 | 2 | 20 | 12 | 21 | 1 | 5 | 4 | | | | 4 | 8 |
| Decatur..... | | | | | 1 | | | 4 | | | | | | | | |
| Dickinson..... | 2 | | | | | | 16 | 8 | | | 2 | 3 | | | 2 | |
| Doniphan..... | 1 | | | | | | | 7 | | | 1 | | | 1 | 4 | |
| Douglas..... | 2 | | | | | 1 | | 10 | | 2 | | | 1 | | | |
| Edwards..... | | | | | | | | 7 | 3 | | | | | | | |
| Elk..... | | 1 | 1 | | | | | 3 | | 1 | | 1 | | | | |
| Ellis..... | | | | | | 6 | | 9 | | | | | | | 3 | 13 |
| Ellsworth..... | 1 | | | | | 6 | 1 | 15 | | | | | | | | |
| Finney..... | | | 1 | | | | | 1 | | | | | | | | |
| Ford..... | | | | | 1 | | | 12 | | 1 | | | | | 2 | |
| Franklin..... | 2 | | | 1 | 11 | | | 16 | | 1 | 3 | | | | | |
| Geary..... | | | | 1 | | | 8 | 15 | | | | | | 1 | | |
| Gove..... | | | | | | | | 1 | | | | 1 | | | | |
| Graham..... | | | | | | | | 1 | | | 3 | | | | | |
| Grant..... | | | | | | | | 1 | | | | | | | | |
| Gray..... | 1 | | | | | | | 1 | | 1 | | | | | | |
| Greeley..... | | | | | | | | | | | | | | | | |
| Greenwood..... | | 3 | | | 1 | 7 | 2 | 4 | | | | | 1 | | | 10 |
| Hamilton..... | | | | | | | | | | | | | | | | |
| Harper..... | | | | | | | | 6 | | | 1 | | | | | |
| Harvey..... | | | | | | 12 | 3 | 2 | 7 | | 1 | | | | | |
| Haskell..... | | | | | | | | | | | | | | | | |
| Hodgeman..... | 2 | | | | 2 | 2 | 3 | 3 | | | | | | | | |
| Jackson..... | | | | | 5 | | 2 | 3 | | | | | | | | |
| Jefferson..... | | | | | | 1 | | 3 | | 1 | | | | | | |
| Jewell..... | | | | 2 | 6 | 2 | | 3 | | | | | 1 | 2 | | |
| Johnson..... | 2 | | 1 | | 6 | | | 3 | | | | | | | | |
| Kearny..... | | | | | 6 | | | 3 | | 2 | | | | | | |

| COUNTIES. | PUERPERAL STATE. | | SKIN AND CELLULAR TISSUE—Gangrene..... | MALFORMATIONS (congenital)..... | EARLY INFANCY. | | OLD AGE—Senile debility..... | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | |
|-------------------|----------------------------------------|-------------------------------------------------|----------------------------------------|---------------------------------|--------------------------------------|--------------------------------|------------------------------|------------------------------|--------------------------|------------------|-------------------------|-----------------------------|-----------------------------|----------------|--------------------------------|---|--|
| | Puerperal albuminuria and convulsions. | Other accidents of pregnancy, sudden death..... | | | Lack of care, malnutrition, etc..... | Other diseases of infancy..... | | Acute poisoning..... | Accidental drowning..... | Fire (burn)..... | Hot liquid (scald)..... | Fractures of the skull..... | Fractures of the femur..... | Inanition..... | Other accidental injuries..... | | |
| Kingman..... | 1 | | | | | 3 | | | | | | | | | | | |
| Kiowa..... | | | | | | | 1 | | | | | | | | | | |
| Labette..... | 1 | | 1 | | 11 | | 1 | | | 1 | | | | | | 1 | |
| Lane..... | | | | | | | 1 | | 10 | | | | | | | | |
| Leavenworth..... | | | | 3 | 1 | | 1 | | | | | | | | | | |
| Lincoln..... | | | | | | | 6 | | | | | | | | | | |
| Linn..... | | | | | | | 3 | | | | | | | | 1 | | |
| Logan..... | | | | | | | | | | 4 | | | | | | | |
| Lyon..... | 2 | | | | | | 13 | | | 1 | | 2 | | | | | |
| Marion..... | | 1 | | | 1 | | | | | | | 1 | | | | 1 | |
| Marshall..... | | | 1 | | 1 | | 15 | | | | | | | 1 | | | |
| McPherson..... | | | | | 4 | | 12 | | | 1 | | | 2 | | | 1 | |
| Meade..... | | | | | | | 2 | | | | | | | | | | |
| Miami..... | | | | | | | 2 | | | | | | | | | | |
| Mitchell..... | 1 | | 1 | | 2 | | 16 | | | 2 | | | | | | | |
| Montgomery..... | 11 | | | | 7 | | 4 | | | | | 1 | | | 1 | | |
| Morris..... | | | 1 | | | | 11 | | | | | | | | | | |
| Morton..... | | | | | 1 | 2 | | | | | | | | | | | |
| Nemaha..... | | | 1 | | 6 | | 17 | | | 1 | 3 | 2 | | | 1 | | |
| Neosho..... | | 1 | | | 2 | | 15 | | | 5 | 1 | 2 | 2 | | | | |
| Ness..... | | | | | | | | | | | | | | | | | |
| Norton..... | | | | | | | | | | | 1 | | | | | | |
| Osage..... | | 3 | | | 6 | | 21 | | | 2 | | | | | | | |
| Osborne..... | | | | | | | | | | | | | | | | | |
| Ottawa..... | | | | | | | 8 | | | 1 | | | | | | | |
| Pawnee..... | 1 | | | | 1 | | 2 | | | | 2 | | | | | | |
| Phillips..... | | | | | 3 | | 12 | | | | | 1 | | | | | |
| Pottawatomie..... | 3 | | | | 1 | 7 | 2 | | | | 2 | | | | 2 | | |
| Pratt..... | 1 | | | | | | | | | | | | | | | | |
| Rawlins..... | 1 | | | | | | 1 | 3 | | | | | | | | | |
| Reno..... | 2 | 1 | | | 6 | | 2 | 5 | | | 1 | 1 | 1 | 1 | 2 | 5 | |
| Republic..... | 2 | | | 2 | | | 15 | | | 2 | | | | | | | |
| Rice..... | | | | | | | | | | | | | | | | | |
| Riley..... | 1 | | | | | | | | | | | | | | | | |
| Rooks..... | | | | | 1 | | 4 | 4 | | | | | | | | | |
| Rush..... | | | | | 2 | | 2 | | | | | | | | | | |

TABLE No. 5—CONTINUED.

| COUNTIES. | PERINATAL STATE. | | | SKIN AND CELLULAR TISSUE—Gangrene..... | MALFORMATIONS (congenital)..... | EARLY INFANCY. | | | OLD AGE—Senile debility | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | |
|------------------|----------------------|--------------------------------------------|---------------------------|----------------------------------------|---------------------------------|---------------------------------------|-------------------------------------------------------------------|--------------------------------|-------------------------------|------------------------------|--------------------------|------------------|-------------------------|-----------------------------|-----------------------------|----------------|--------------------------------|--|----|
| | Puerperal death..... | Puerperal albuminuria and convulsions..... | Puerperal Septicæmia..... | | | Lack of care, malnutrition, etc. | Congenital debility, jaundice and sclerema (premature birth)..... | Other diseases of infancy..... | | Acute poisoning..... | Accidental drowning..... | Fire (burn)..... | Hot liquid (scald)..... | Fractures of the skull..... | Fractures of the femur..... | Inanition..... | Other accidental injuries..... | | |
| | | | | | | | | | | | | | | | | | | | |
| Stevens..... | | | | | 1 | | 2 | 1 | 2 | | | | | | | | | | |
| Sumner..... | 1 | 1 | 1 | 1 | | 1 | | 1 | 2 | | | 1 | 2 | | | | | | |
| Thomas..... | | | | | | | | | 1 | | | 1 | | | | | | | |
| Trego..... | 1 | | | | | | 3 | | 3 | | | | | | | | | | |
| Wabaunsee..... | | | | | | | | | 2 | | | | | | | | | | |
| Wallace..... | | | | | | | | 2 | | | | | | | | | | | |
| Washington..... | 2 | 1 | | | 3 | 3 | | 18 | 1 | | | 1 | | | | | | | |
| Wichita..... | | | | | | | | 1 | | | | | | | | | | | |
| Wilson..... | 1 | | | | | | | 4 | | | | 1 | 1 | | | | | | |
| Woodson..... | 1 | | | | | | 2 | 18 | 1 | | | | | | | | | | |
| Wyandotte..... | | | | | 11 | 8 | | 5 | 2 | | | | | 2 | | | | | |
| Cities..... | | | | | | | | | | | | | | | | | | | |
| Coffeyville..... | | | | | | | | | | | | 2 | | | | 12 | | | |
| Kansas City..... | 14 | 1 | 1 | 1 | 5 | 121 | 11 | 21 | | | | 5 | 13 | 1 | 17 | | | | |
| Leavenworth..... | 1 | 1 | 1 | 1 | | 8 | 9 | 86 | 1 | | | 1 | | | 1 | 1 | | | |
| Topeka..... | | 1 | 1 | | | 4 | 5 | 9 | 40 | 1 | | 3 | 2 | | 3 | | | | |
| Wichita..... | 4 | 2 | | 2 | | 19 | 20 | 1 | 24 | | | 6 | | | 3 | | | | |
| Totals..... | 71 | 25 | 13 | 19 | 18 | 342 | 112 | 122 | 727 | 30 | 66 | 60 | 14 | 37 | 12 | 56 | | | 31 |

TABLE No. 5—CONTINUED.

| COUNTIES. | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | | | ILL-DEFINED. | | | | TOTAL NUMBER OF DEATHS. | |
|------------|------------------------------|--------|----------|-------------------|----------------------------------|----------------------|--------------------------|-----------|------------------|--------------------|--------------------------------------|----------------------|---------------------------|---------|------------------------------|-------------------------|--------------|
| | Dysocia (child) | Falls. | Gunshot. | Mining accidents. | Railroad accidents and injuries. | Vehicles and horses. | Other external violence. | Homicide. | Other accidents. | Suicide by poison. | Suicide by hanging or strangulation. | Suicide by firearms. | Suicide by other methods. | Droopy. | Sudden death (not puerperal) | | Unspecified. |
| Allen | | | | | | | | | | | | | | | | 254 | 308 |
| Anderson | | 1 | | | | | | | | 1 | | | | 8 | 3 | 1 | 85 |
| Atchison | | | | | 4 | | | | | | 1 | | | | | 64 | 291 |
| Barber | | | 2 | | | | | | 5 | | | | | | | 8 | 26 |
| Barton | | | | | | | | | | 2 | | | | 1 | | 4 | 106 |
| Bourbon | | | 8 | | 8 | | | | | | | | | | | | 256 |
| Brown | | | | | | | | | 1 | | | | | 9 | 3 | 17 | 89 |
| Butler | | | 2 | | 1 | 1 | | | | | | | | | 2 | 11 | 177 |
| Chase | | | | | | | | 1 | | 1 | | | | | | | 44 |
| Chautauqua | | | 1 | | | | | 2 | | | | | | 1 | 1 | | 46 |
| Cherokee | | | 2 | 19 | | | | | | | | 1 | 16 | 1 | | 44 | 426 |
| Cheyenne | | | | | | | | | | | | | 1 | 1 | | | 23 |
| Clark | | | 1 | | | | | | | | | | | | | 3 | 21 |
| Clay | | | 2 | | | | | | | | | 1 | | 1 | 3 | 17 | 107 |
| Cloud | | | | | | | | | | | | | 6 | | | | 21 |
| Coffey | | | | | | | | | | | | | | 5 | | 13 | 167 |
| Comanche | 2 | | | | | | | | | | | | | | | 3 | 30 |
| Cowley | | 1 | 5 | | 2 | | | | 5 | | | | 2 | 9 | | 18 | 297 |
| Crawford | | | 8 | 18 | 3 | 1 | | 2 | | 1 | 2 | 3 | 4 | 10 | | 78 | 574 |
| Decatur | | | | | | | | | | | | | | | 2 | 2 | 18 |
| Dickinson | | | 1 | | 2 | | | | | | 1 | | | | | 31 | 176 |
| Doniphan | | 1 | | | 1 | | | | | | | | 2 | | | 9 | 105 |
| Douglas | | | 1 | | | 2 | | 2 | | 1 | 3 | 1 | | 6 | | | 288 |
| Edwards | | | | | | | | | | | | | | | | 1 | 47 |
| Elk | | | 1 | | | | | | | | | | | | | 1 | 45 |
| Ellis | | | | | | | | | | | | | | | | 4 | 126 |
| Ellsworth | | | | 1 | | | | 1 | | | | | | | | | 103 |
| Finnney | | | | | | | | | | | | | | | 1 | 34 | 77 |
| Ford | | | | | | 1 | 1 | | 1 | | | | | 2 | | 6 | 90 |
| Franklin | | | | | 2 | | | 3 | 3 | | | | | 4 | | 21 | 223 |
| Geary | | 1 | 2 | | 3 | | | 1 | | 1 | | | | 4 | 1 | 5 | 115 |
| Gove | | | | | | | | | | | | | | | | | 25 |
| Graham | | | 1 | | | | | | | 1 | 1 | | | | 1 | 1 | 25 |
| Grant | | | | | | | | | | | | | | | | 10 | 10 |
| Gray | | | | | 2 | | | | | | | 2 | | | 1 | 2 | 20 |
| Greeley | | | 1 | | | | | | | | | | 1 | | | 2 | 15 |
| Greenwood | | | | | | | | | | | | | | | | 5 | 118 |
| Hamilton | | | | | | | | | | | | | | | | 3 | 21 |
| Harper | | | | | | | | | | | | | | | | 19 | 96 |
| Harvey | | | | | 4 | | | | | 4 | | | 1 | | | 11 | 143 |
| Haskell | | | | | | | | | | | | | | | 1 | | 8 |
| Hodgeman | | 1 | | | | | | | | | | | | | 1 | 1 | 24 |
| Jackson | | | 1 | | | | | | 3 | | | | 3 | 4 | | | 106 |
| Jefferson | | | 1 | | | | | | | | | | 1 | | | 5 | 65 |
| Jewell | | | 1 | | | | | | | 1 | | | | | | 4 | 73 |
| Johnson | | 1 | 4 | | 1 | | | | | | | | | 3 | | | 96 |
| Kearny | | | | | | | | | | | | | | | | 6 | 13 |

TABLE No. 5—CONTINUED.

| COUNTIES. | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | | | ILL-DEFINED. | | | | TOTAL NUMBER OF DEATHS. | |
|--------------|------------------------------|-------|---------|------------------|---------------------------------|---------------------|-------------------------|----------|-----------------|-------------------|-------------------------------------|---------------------|--------------------------|--------|------------------------------|-------------------------|-------------|
| | Dysentea (child) | Falls | Gunshot | Mining accidents | Railroad accidents and injuries | Vehicles and horses | Other external violence | Homicide | Other accidents | Suicide by poison | Suicide by hanging or strangulation | Suicide by firearms | Suicide by other methods | Dropsy | Sudden death (not puerperal) | | Unspecified |
| Kingman | | | | | | | | | | | | | | | 1 | 9 | 29 |
| Kiowa | | | | | | | | | | | | | | | 1 | 1 | 8 |
| Labette | | | 1 | | | | | | 11 | | | | | | | 3 | 86 |
| Lane | | | | | | | | | | | | | | | | 2 | 17 |
| Leavenworth | | 1 | | | 2 | 1 | | | | | | 1 | | | | 6 | 95 |
| Lincoln | | | | | | | | | | | | | | | | 4 | 66 |
| Linn | | | 1 | | | | | | | | | | | 1 | | 8 | 46 |
| Logan | | | | 1 | | 1 | | | | | | | | | | 2 | 19 |
| Lyon | | | | | | | | | 4 | | | | 1 | 4 | | 22 | 246 |
| Marion | | 4 | | | | | | | | | | | | | | 8 | 71 |
| Marshall | | | 1 | | | 1 | | | | 1 | | 1 | | 3 | | 25 | 180 |
| McPherson | | | 2 | | 1 | | 3 | | | | | | | 1 | | 10 | 89 |
| Meade | | | 1 | | | | | | | | | | | | | 2 | 17 |
| Miami | | 1 | | | | | | | | | | | | | | 20 | 64 |
| Mitchell | 2 | | | | 2 | | | | 2 | | | | | | | 7 | 120 |
| Montgomery | | | | 1 | 4 | | | 2 | | | | 1 | | 1 | | | 177 |
| Morris | | | | | 3 | | | | | | | | | 3 | 1 | 30 | 108 |
| Morton | | | | | | | | | | | | | | | | | 8 |
| Nemaha | | | 1 | 1 | | | | | 6 | 2 | 1 | | | 9 | | 27 | 231 |
| Neosho | | | 1 | | | | | | | | | | | 6 | | 1 | 132 |
| Ness | | | | | | | | | | | | | | | | 8 | 19 |
| Norton | | | | | | | | | | | | 1 | | | | 25 | 47 |
| Osage | | | | 2 | 3 | 1 | | | | 1 | 2 | 3 | 3 | 9 | | 5 | 228 |
| Osborne | | | | | | | | | | | | | | | | 87 | 106 |
| Ottawa | | | | | 2 | | | | | 2 | | | | 1 | | 12 | 61 |
| Pawnee | | 1 | | | | | | | | | | | | | 2 | 8 | 46 |
| Phillips | | 3 | | | 1 | | | | | 1 | 1 | | | | 1 | | 83 |
| Pottawatomie | | 1 | | | | | | | 1 | | | | | | | | 88 |
| Pratt | | | 1 | | 1 | | | | | | | | | | | 21 | 60 |
| Rawlins | | | 1 | | | | | | | | | | | | | 1 | 68 |
| Reno | | 1 | 2 | | 5 | 2 | | | | | | 1 | 1 | 8 | | 22 | 133 |
| Republic | | | | | 3 | 3 | 1 | | | | | 3 | | 3 | 1 | 7 | 145 |
| Rice | | | | | | | | | | | | | | | | | |
| Riley | | | | | 4 | | | 4 | | 2 | 1 | 1 | 1 | 2 | | 4 | 95 |
| Rooks | | 1 | | | | 1 | | | | | | | | 2 | | | 62 |
| Rush | | | 2 | | | 1 | | | | | | 2 | | 2 | 3 | 30 | 83 |
| Russell | | 3 | | | | | | | 1 | | | | | 1 | | | 46 |
| Saline | | 1 | 4 | | 1 | 1 | | | | 2 | | 1 | | 6 | | 4 | 195 |
| Scott | | | 1 | | 2 | | | | 2 | | | | | | | | 28 |
| Sedgwick | | | | | 1 | | | | | 1 | | | | | | 1 | 53 |
| Seward | | 1 | | | | | | | | | | | | | | 1 | 15 |
| Shawnee | | | | | | | | | | | | | | | 2 | | 32 |
| Sheridan | | | | 1 | | | | | 1 | | | | | 1 | 1 | | 30 |
| Sherman | | | | | 1 | | | | | | | | | | | 3 | 52 |
| Smith | | | 1 | | | | | | | | | | | | | | 141 |
| Stafford | | | | | | 2 | | | | 1 | | | | 1 | 1 | 3 | 84 |
| Stanton | | | | | | | | | | | | | | 2 | | | |

TABLE No. 5—CONCLUDED.

| COUNTIES. | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | | | | ILL-DEFINED. | | | TOTAL NUMBER OF DEATHS. | |
|-------------|------------------------------|-------|---------|------------------|---------------------------------|---------------------|-------------------------|----------|-----------------|-------------------|-------------------------------------|---------------------|--------------------------|--------|------------------------------|-------------------------|-------------|
| | Dyslocia (child) | Falls | Gunshot | Mining accidents | Railroad accidents and injuries | Vehicles and horses | Other external violence | Homicide | Other accidents | Suicide by poison | Suicide by hanging or strangulation | Suicide by firearms | Suicide by other methods | Dropsy | Sudden death (not puerperal) | | Unspecified |
| Stevens | | | | | | | | | | | | | | | | 1 | 9 |
| Sumner | | | | | | | | | 2 | 1 | | | | | | 1 | 122 |
| Thomas | | | | | | | | | | 1 | | | | | | 14 | 38 |
| Trego | | | | | | 2 | | | | | | | | | | | 29 |
| Wabaunsee | | | | | 16 | | | | | 1 | | | | | 5 | 10 | 84 |
| Wallace | | | | | | | | | | | | | | | | 4 | 14 |
| Washington | | | | | 1 | | | | | | | | 1 | 2 | 5 | 48 | 194 |
| Wichita | | | | | | | | | | | | | | | | | 12 |
| Wilson | | 1 | | | 1 | | | | | 1 | | 1 | | 2 | 2 | | 86 |
| Woodson | | 1 | | | | 1 | | | | | | | | 1 | | 11 | 103 |
| Wyandotte | | 1 | 3 | 5 | | | | | | | | | | 1 | 1 | 6 | 105 |
| Cities | | | | | | | | | | | | | | | | | |
| Coffeyville | | | 5 | | 6 | | | 4 | | | | | | 7 | | 87 | 186 |
| Kansas City | 26 | | | | | | | 9 | | 9 | | 4 | 2 | | | 9 | 1,325 |
| Leavenworth | | | | | 3 | | | 5 | 2 | 3 | | 2 | | | | 2 | 345 |
| Topeka | | | 2 | | 28 | 1 | | 2 | 11 | 2 | | | 3 | 18 | | 23 | 625 |
| Wichita | | | 5 | | 1 | | 12 | | 1 | 4 | | | | 8 | | | 566 |
| Totals | 30 | 26 | 75 | 49 | 126 | 23 | 16 | 39 | 61 | 46 | 13 | 23 | 22 | 201 | 49 | 1,371 | 13,082 |

The preceding table contains only a list of those causes producing ten or more deaths. Other causes, with the number of deaths attributed to each, are as follows:

| | | | | | |
|------------------------------------------------------------|---|------------------------------------------------------------------------------------|---|---------------------------------------------------------|---|
| GENERAL DISEASES. | | | | | |
| Addison's disease..... | 4 | Metritis..... | 2 | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | |
| Cancer and other mal. tumors of the skin..... | 9 | Non-venereal diseases of the male genital organs..... | 1 | Chorea..... | 8 |
| Exophthalmic goiter..... | 9 | Uterine hemorrhage (not puerperal)..... | 4 | Diseases of the eye and its adnexa..... | 1 |
| Lead poisoning..... | 1 | Uterine tumor (not cancer)..... | 9 | Diseases of the ear and its adnexa..... | 2 |
| Other professional intoxications..... | 4 | Other diseases of the uterus..... | 8 | ORGANS OF LOCOMOTION. | |
| Miliary fever..... | 2 | SKIN AND CELLULAR TISSUE. | | Affections of the bones..... | 4 |
| Mumps..... | 2 | Furuncle (carbuncle)..... | 1 | THE PUERPERAL STATE. | |
| Varicella..... | 2 | Phlegmon, warm abscess..... | 2 | Phlegmasia alba dolens..... | 2 |
| Recurrent fever..... | 2 | Other diseases of the skin and its adnexa (cancer excepted)..... | 2 | PRODUCED BY EXTERNAL CAUSES. | |
| Scrofula..... | 8 | Anthritis and other diseases of the joints (tubercle and rheumatism excepted)..... | 4 | Absorption of deleterious gases (suicide excepted)..... | 9 |
| Smallpox..... | 9 | Amputation (for unspecified disease)..... | 1 | Burning by corrosive substances..... | 6 |
| DIGESTIVE APPARATUS. | | Other affections of the organs of locomotion..... | 8 | Dislocations..... | 5 |
| Affections of the mouth and its adnexa..... | 1 | RESPIRATORY SYSTEM. | | Electrical disturbances..... | 9 |
| Affections of the pharynx..... | 2 | Affections of the larynx..... | 6 | Fractures of the vertebrae..... | 8 |
| Affections of the esophagus..... | 5 | Diseases of the nasal fossae..... | 8 | Other fractures..... | 4 |
| Affections of the spleen..... | 4 | Gangrene of the lung..... | 8 | Freezing..... | 3 |
| Hydatid tumor of the liver..... | 5 | Pulmonary emphysema..... | 5 | Electric shock..... | 5 |
| Icterus gravis..... | 5 | CIRCULATORY APPARATUS. | | Suicide by asphyxia..... | 4 |
| GENITO-URINARY APPARATUS AND ITS ADNEXA. | | Affections of the veins, varices, hemorrhoids, phlebitis..... | 8 | Suicide by drowning..... | 8 |
| Cysts and other tumors of the ovary..... | 3 | Affections of the lymphatic system, lymphangitis, etc..... | 8 | Suicide by cutting-instruments..... | 8 |
| Other diseases of the female genital organs..... | 6 | | | Suicide by precipitation from a height..... | 1 |
| Diseases of the urethra (urinary abscess, etc.)..... | 3 | | | Sunstroke (insolation)..... | 9 |
| Diseases of the breast (not puerperal, not cancerous)..... | 2 | | | | |

TABLE No. 6.—RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS, 1908.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | | | | | |
|------------|-------------------|--------------------------------|--------------------|-------------------------------|---------------------------|----------------|------------------------------------------|-------------------------------|----------------|-------------------|--------|-----------|------------|-------------|-------------|-------------------------------------------|------------------------|-------------------------------------------|---------------------------------------------------------|
| | Abscess. | Alcoholism, acute and chronic. | Anemia, chlorosis. | Cancer and other mal. tumors. | | | | | | Cholera infantum. | Croup. | Diabetes. | Dysentary. | Diphtheria. | Erysipelas. | Intermittent fever and malarial cachexia. | Influenza (la grippe). | | |
| | | | | Of the buccal cavity. | Of the stomach and liver. | Of the rectum. | Of the peritoneum, intestines or rectum. | Of the female genital organs. | Of the breast. | | | | | | | | | Of other organs and organs not specified. | Other tumors (tumors of the female genitalia excepted). |
| | | | | | | | | | | | | | | | | | | | |
| Allen | 2 | 3 | 1 | 9 | | | | | | 6 | | 3 | 3 | 3 | | | | | |
| Anderson | 2 | | | 2 | | | | | | 10 | | 1 | 2 | 1 | | | | | |
| Atchison | | | | | | | | | | | | | | | | | | | |
| Barber | 1 | | | | | | | | | | | | | | | | | | |
| Barton | 1 | 3 | | | 1 | | | | | | | 1 | 3 | 1 | | 1 | | | |
| Bourbon | 2 | 1 | | 13 | | | | | | 2 | | 2 | | | 3 | 1 | | | |
| Brown | 2 | | | 4 | 3 | | | | | 1 | | 2 | 2 | 2 | | | | | |
| Butler | | | | 1 | | | | | | | | 1 | | | | 6 | | | |
| Chase | | 1 | 1 | 1 | 1 | | | | | 1 | 2 | 1 | 1 | 1 | | 4 | | | |
| Chautauqua | | | | | | | | | | | | 4 | | | | | | | |
| Cherokee | 2 | 1 | 2 | | 4 | | | | | 2 | 11 | 1 | | 16 | 1 | | 4 | | |
| Cheyenne | | | | | | | | | | 2 | | | | 2 | | | | | |
| Clark | | | | | 1 | | 1 | | | | | | | | | | | | |
| Clay | | | | | 4 | | | | | 2 | | | | | 1 | 3 | | | |
| Cloud | | | | | 2 | | | | | | | 12 | 3 | 1 | 1 | | | | |
| Coffey | 1 | | | 6 | 2 | 1 | | | | | | 1 | 5 | 2 | | | | | |
| Comanche | | | | 1 | | | | 1 | | | | | | | 3 | | | | |
| Cowley | 1 | | 1 | 6 | | | | | | | | | | | 3 | | | | |
| Crawford | 3 | | | 11 | 1 | 2 | | | | 4 | 2 | 3 | | 11 | 2 | 3 | 2 | | |
| Decatur | | | | | | | | | | 4 | | | 16 | 16 | 1 | 5 | 4 | | |
| Dickinson | 2 | | 2 | | 3 | | | | | | | 8 | 4 | 2 | | 2 | | | |
| Doniphan | | | | 1 | 4 | | | | | 1 | | | | | | 1 | | | |
| Douglas | 3 | 5 | 2 | 27 | 1 | | | | 9 | 3 | 2 | 4 | 5 | 4 | 1 | 2 | 9 | | |
| Edwards | | | | 1 | 4 | | | | | | | 2 | | | | | | | |
| Elk | | 1 | 1 | | | | | | | 1 | | | | 1 | | 5 | 5 | | |
| Ellis | | | | 6 | | | | | | 8 | 4 | | | | | | | | |
| Ellsworth | | | | 2 | 1 | 1 | | 1 | | | | 2 | | 7 | 1 | 1 | | | |
| Finney | | | | 1 | 1 | | | 1 | | 3 | 1 | | | 1 | 1 | | | | |
| Ford | 1 | | 1 | | 1 | | 1 | | | 6 | | | 2 | 2 | | 2 | | | |
| Franklin | 1 | 1 | 2 | | 3 | 2 | | 1 | | 1 | | 2 | | 2 | | 4 | 1 | | |
| Geary | | | | | 6 | | | | 2 | | | | | | | | | | |
| Gove | | | | | | | | | | 2 | | 4 | 5 | 2 | | | | | |
| Graham | | | | | | | | | | | | 1 | | | | | | | |
| Grant | | | | | 1 | | 1 | 1 | | 2 | | | | | | | | | |
| Gray | | | | | | | | | | 2 | | | | 1 | | | | | |
| Greeley | | | | | | | | | | | | | | | | | | | |
| Greenwood | | 1 | | | 6 | | 1 | | 1 | 3 | 1 | 1 | 1 | 3 | | | | | |
| Hamilton | | | | | 2 | | | | | | | 4 | | | | | | | |
| Harper | 2 | | | | 2 | | 1 | 2 | | | | 1 | 1 | 2 | | 3 | | | |
| Harvey | 1 | | | 1 | 1 | | 1 | | | | | 3 | 2 | 3 | | | | | |
| Haskell | | | | | | | | | | | | | | | | | | | |
| Hodgeman | | | | | | | | | | | | 1 | | 1 | | | | | |
| Jackson | | | | | 4 | | 1 | | 4 | 1 | | 4 | 2 | 2 | | 4 | | | |
| Jefferson | 1 | 1 | | | 3 | | 1 | 3 | 1 | 5 | | 2 | 1 | | | 4 | | | |
| Jewell | 1 | | | | | | 1 | 2 | | | | 1 | | 3 | | | | | |
| Johnson | | | | | | | | 1 | | | | 1 | | 1 | | | | | |
| Kearny | 1 | | | | | | | | | | | 1 | | | | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | | | | |
|-------------------|-------------------|--------------------------------|--------------------|-------------------------------|---------------------------|----------------------------------------------|-----------------------------------|----------------|-------------------------------------------|-------------------|--------|-----------|------------|-------------|-------------|--------------------------------|-------------------------------------------|---------------------------------------------------------|
| | Albacore. | Alcoholism, acute and chronic. | Anemia, chlorosis. | Cancer and other mal. tumors. | | | | | | Cholera infantum. | Croup. | Diabetes. | Dysentery. | Diphtheria. | Erysipelas. | If. influenza (la grippe)..... | Intermittent fever and malarial cachexia. | |
| | | | | Of the buccal cavity. | Of the stomach and liver. | Of the peritoneum, intestines or rectum..... | Of the female genital organs..... | Of the breast. | Of other organs and organs not specified. | | | | | | | | | Other tumors (tumors of the female genitalis excepted). |
| | | | | | | | | | | | | | | | | | | |
| Kingman..... | 1 | | | | 3 | | | 1 | | 1 | | 2 | | 1 | 1 | | | |
| Kiowa..... | | | | | 2 | | | 1 | | 1 | | | | 1 | | 4 | 1 | |
| Labette..... | | | | | | | | | | | | | | | | | | |
| Lane..... | | | | | | | | | | | | | | | | | | |
| Leavenworth..... | 1 | | 2 | | 7 | 2 | | 1 | | 1 | | 2 | 1 | | | 1 | | |
| Lincoln..... | 1 | | | 3 | 1 | | | | | 1 | | 1 | 1 | 2 | | | | |
| Linn..... | | | | | | | | | | | | | | | | | | |
| Logan..... | | | | | | | | | | | | | | | | | | |
| Lyon..... | 2 | | | | 4 | | | | | 3 | | 3 | | 1 | | 3 | 1 | |
| Marion..... | 1 | | | | 1 | | 1 | | | 2 | | 1 | | 1 | 1 | 2 | | |
| Marshall..... | | | | 9 | | | | | | 1 | | 3 | 1 | 1 | | | | |
| McPherson..... | | | | 4 | | | | | | 1 | | | | 1 | | 1 | | |
| Meade..... | | | | | 1 | | | | | | | 2 | 1 | 4 | | | | |
| Miami..... | | | | 2 | | | | | | | | | | | | | | |
| Mitchell..... | | | 2 | | | | | | | 2 | | 1 | 4 | 1 | | 1 | | |
| Montgomery..... | | | | 1 | 4 | | 1 | | | 4 | 4 | | | | | 2 | 1 | |
| Morris..... | | | | | | | 1 | | | | | | | 3 | | | | |
| Morton..... | | | | | | | | 1 | | 2 | 1 | | | | | 1 | | |
| Nemaha..... | 1 | 1 | | 1 | 2 | 1 | 1 | | | 1 | | 3 | 2 | 2 | | 3 | | |
| Neosho..... | 2 | 0 | 1 | 1 | 10 | | 1 | | | 3 | | 3 | 1 | 2 | | 2 | | |
| Ness..... | | 1 | | | 1 | | | | | | | 2 | 1 | | | | | |
| Norton..... | | | | 1 | | | | | | 1 | | 1 | 1 | 1 | | 3 | | |
| Osage..... | | | | | 4 | | | | | 1 | 1 | 1 | 4 | 1 | | 8 | | |
| Osborne..... | | 1 | | 1 | | | | | | | | 2 | 2 | | | | | |
| Ottawa..... | | | | | 3 | | | | | | | 2 | | | | | | |
| Pawnee..... | 1 | 1 | | | | 1 | 1 | 1 | | 2 | 1 | 2 | | | | | | |
| Phillips..... | | 1 | | | 2 | | | | | | | 2 | | | 1 | 1 | 1 | |
| Pottawatomie..... | | | 1 | | | | 1 | 1 | | | | 1 | | | 1 | | | |
| Pratt..... | | | | 2 | | | | | | | | 2 | | | | 1 | | |
| Rawlins..... | 1 | | | | | | | | | 3 | 2 | 2 | | | | 2 | | |
| Reno..... | | | 1 | | 2 | | | | | 1 | | 3 | | 7 | | 2 | 1 | |
| Republic..... | | | | | 2 | | | | | 1 | 1 | 3 | 1 | | | | | |
| Rice..... | | | | 1 | 2 | | | | | 2 | 2 | | | 1 | 1 | | | |
| Riley..... | 2 | 2 | | 1 | 2 | | 4 | 1 | | 2 | 1 | 4 | 1 | | | 17 | 5 | |
| Rooks..... | | | | | | | | | | | | | | | | | | |
| Rush..... | | | | | | | | | | | | | | 7 | 1 | | | |
| Russell..... | | | | | 1 | | 1 | | | 1 | | 1 | 1 | 2 | | | | |
| Salina..... | | | | | 2 | | 3 | | | 3 | | | 8 | 4 | 1 | 4 | | |
| Scott..... | | | | | 1 | | | | | | | | | | | | | |
| Sedgwick..... | 2 | | 3 | | 56 | | | | | 2 | 7 | | | 2 | 4 | 12 | | |
| Seward..... | 1 | | 1 | | 1 | | | | | | 1 | | | | | | | |
| Shawnee..... | | | | | | | | | | 2 | | | | 2 | | | | |
| Sheridan..... | | | | | 1 | | | | | | | 2 | | | | | | |
| Sberman..... | | | | | | | | | | | | 1 | | | | | | |
| Smith..... | | 1 | | 1 | 2 | | 1 | 1 | 1 | 7 | | 2 | 2 | | | 3 | | |
| Stafford..... | | 1 | | | 3 | 1 | | | | 9 | 1 | 4 | 2 | | | 6 | | |
| Stanton..... | | | | | | | | | | | | | | | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | | | | | | | |
|--------------|-------------------|--------------------------------|--------------------|-------------------------------|---------------------------|----------------|----------------------------------|-------------------------------|----------------|-------------------------------------------|---------------------------------------------------------|--------|-------------------|-----------|------------|-------------|-------------|------------------------|-------------------------------------------|
| | Abscess. | Alcoholism, acute and chronic. | Anemia, chlorosis. | Cancer and other mal. tumors. | | | | | | | | Group. | Cholera infantum. | Diabetes. | Dysentery. | Diphtheria. | Erysipelas. | Influenza (la grippe). | Intermittent fever and malarial cachexia. |
| | | | | Of the buccal cavity. | Of the stomach and liver. | Of the rectum. | Of the peritoneum, intestines or | Of the female genital organs. | Of the breast. | Of other organs and organs not specified. | Other tumors (tumors of the female genitalia excepted). | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| Stevens. | | | | | | | | | | | | | | | | | | | |
| Sumner. | | | | | | | | | | | | | | | | | | | |
| Thomas. | 1 | | 1 | | 5 | 4 | | | | | | 2 | 1 | 4 | 2 | | 5 | | |
| Trego. | | | | | | | | | | 1 | | | | | | | | | |
| Wabaunsee. | 1 | | | | | | | | | | 1 | | | 2 | 1 | | | | |
| Wallace. | | | | | | | | | | | | | | | | | | | |
| Washington. | | | 1 | | 2 | | | | 1 | 2 | 1 | 5 | 2 | 3 | | | 2 | 1 | |
| Wichita. | | | | | | | | | | | | | | | | | | | |
| Wilson. | | | 1 | | 2 | 1 | | | | | | | 1 | 1 | 1 | | 5 | | |
| Woodson. | | | | 1 | 2 | | | | 1 | | 2 | 1 | 1 | 3 | | | 3 | | |
| Wyandotte. | | | | | 4 | 1 | | | 1 | 1 | | | | 4 | 2 | | 1 | | |
| Cities. | | | | | | | | | | | | | | | | | | | |
| Atchison. | 5 | | | | 3 | | | | | 2 | | 1 | | 2 | | | 1 | | |
| Coffeyville. | 1 | | 1 | | 1 | | | | | | | 2 | | | | | | | |
| Kansas City. | | 6 | 6 | | 8 | 8 | 8 | | 6 | 8 | 2 | 22 | 1 | 3 | 11 | 1 | 11 | 4 | |
| Leavenworth. | 1 | | | | 2 | | | | 8 | 8 | | | 2 | 2 | | | | | |
| Parsons. | | 1 | | | 1 | | | | 1 | 8 | | 6 | 5 | 6 | 4 | 1 | 2 | | |
| Pittsburg. | | | | | | | | | | | | | | | | | | | |
| Topeka. | 2 | | | | 6 | 7 | | | 3 | 2 | 13 | 4 | 6 | 1 | 8 | 3 | 8 | | |
| Wichita. | | | | | | | | | | | | | | | | | | | |
| Totals. | 57 | 34 | 83 | 120 | 224 | 26 | 44 | 80 | 81 | 25 | 187 | 53 | 154 | 115 | 192 | 26 | 179 | 37 | |

TABLE No. 6—CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | |
|------------|---------------------|----------|-------------------|------------------------------------|------------------------------|-------------------------------|----------------|-----------|-----------------------------|----------------------------|-------------------------------|--------------------------|---------------------------------------------|-----------------|---------------------|-------------------------|-----------------------------------------|------------------------------|
| | Chronic poisonings. | Measles. | Membranous croup. | Purulent infection and septicemia. | Rheumatism—acute, articular. | Rheumatism—chronic, and gout. | Scarlet fever. | Syphilis. | Tuberculosis of the larynx. | Tuberculosis of the lungs. | Tuberculosis of the meninges. | Tuberculosis, abdominal. | Typhoid fever. | Whooping-cough. | Cerebral softening. | Other nervous diseases. | Congestion and hemorrhage of the brain. | Convulsions (not puerperal). |
| | | | | | | | | | | | | | | | | | | |
| Allen | | | 3 | | | | 1 | 3 | | 16 | 2 | | 9 | 1 | 2 | | 3 | |
| Anderson | | | | | 1 | 1 | | | | 5 | | | 3 | | | | | |
| Atchison | | | | | | | 1 | | | 5 | | 2 | 1 | | | | | |
| Barber | 1 | | | | | | | | | 1 | | | 3 | | | | 5 | |
| Barton | | | | | 1 | 1 | 2 | | | 11 | | 1 | 3 | 2 | | | | |
| Bourbon | | | 1 | | | | | | | 18 | | | 5 | 4 | | 1 | 9 | |
| Brown | | | | 5 | | | | | | 10 | | | 1 | 1 | | | 2 | |
| Butler | 1 | | | | 1 | | 1 | | | 13 | | | 3 | | | | | |
| Chase | | | | 1 | | | | | 1 | | | | 4 | | | | | |
| Chautauqua | | | | | | | | | | 2 | | | | | | | | |
| Cherokee | 1 | | | | 2 | | | 3 | | 23 | | | 8 | 6 | | | 2 | |
| Cheyenne | | | | | | | | 7 | | 3 | | | | | | | | |
| Clark | | | | 1 | | | | 1 | | | | | | | | | | |
| Clay | | | | | 1 | | | | | 7 | | | 8 | | | 2 | 1 | 1 |
| Cloud | 1 | | | 4 | 1 | | | | | 7 | | | 7 | 1 | | | | |
| Coffey | | | | 2 | | 1 | | | | 7 | | | 2 | | | | 2 | |
| Comanche | | | | | | | | | | 2 | | | | | | | | |
| Cowley | | | 1 | | 1 | | | | | 17 | 1 | | 11 | | | | | 3 |
| Crawford | 1 | 7 | | | 2 | 1 | 3 | | | 22 | | | 15 | 2 | 1 | | 1 | |
| Decatur | | | | | | | | | | | | | | | | | | |
| Dickinson | | | | | 1 | | | | | 7 | | 1 | 3 | | | 4 | 2 | |
| Doniphan | | | | | | | | | | 2 | | | 1 | 1 | | | | |
| Douglas | | | | 11 | 5 | 2 | 1 | | | 39 | | | 3 | 1 | | 5 | 2 | |
| Edwards | 1 | | 2 | | | | | | | 2 | | | 2 | | | | | |
| Elk | | 1 | | | | | | | | 4 | 1 | | 1 | | | | | |
| Ellis | | | | | | 2 | | | | 6 | | | | | | | 2 | |
| Ellsworth | | | | 1 | | | 3 | | | 2 | | 2 | 1 | | 2 | | 7 | |
| Finney | | | | 1 | 1 | | | 1 | | 9 | | | 3 | | | | | |
| Ford | | | 1 | | | | | | | 5 | | | 2 | 3 | | 2 | | |
| Franklin | | | | 1 | | | 3 | 1 | | 17 | 2 | | 5 | | | | 9 | |
| Geary | | | | | | | 1 | | | 7 | | | | | | | | |
| Gove | | | | | | | | | | 6 | | | 3 | | | | | |
| Graham | | | | 1 | | | | | | | | | | | | | | |
| Grant | | | | | | | | | | 1 | | | | | | | | |
| Gray | | | | | | | | | | 1 | | | | | | | | |
| Greeley | | | | | | | | | | | | | | | | | | |
| Greenwood | 1 | | | 1 | | | | | | 7 | | | 3 | 1 | | | | 2 |
| Hamilton | | | | | | | | | | 2 | | | 1 | | | | | |
| Harper | 4 | 1 | 3 | | | | | | | 4 | | 1 | 3 | 3 | 1 | | | 1 |
| Harvey | | | | | | | 1 | | | 5 | | | | 6 | 2 | | | |
| Haskell | | | | | | | | 1 | | 1 | | | | | | | | |
| Hodgeman | | | | | | | | | | | | | | | | | | |
| Jackson | | | | 2 | 3 | | | | | 6 | | 1 | 5 | 1 | 1 | | 1 | |
| Jefferson | 1 | | | 2 | 1 | | 1 | | | 2 | | | 2 | | | | 4 | |
| Jewell | 3 | 2 | | | | | 1 | | | 3 | 1 | | 3 | 3 | | | | |
| Johnson | | | | | | | 1 | | | 1 | | | | | | | | |
| Kearny | | | | | | | 1 | | | 2 | | | | 2 | | | | |

TABLE No. 6 - CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | |
|--------------|---------------------|----------|-------------------|-------------------------------------|------------------------------|-------------------------------|----------------|-----------|-----------------------------|----------------------------|-------------------------------|--------------------------|---------------------------------------------|-----------------|-------------------------|---------------------|-----------------------------------------|------------------------------|
| | Chronic poisonings. | Measles. | Membranous croup. | Purulent infection and septicaemia. | Rheumatism—acute, articular. | Rheumatism—chronic, and gout. | Scarlet fever. | Syphilis. | Tuberculosis of the larynx. | Tuberculosis of the lungs. | Tuberculosis of the meninges. | Tuberculosis, abdominal. | Typhoid fever. | Whooping-cough. | Other nervous diseases. | Cerebral softening. | Congestion and hemorrhage of the brain. | Convulsions (not puerperal). |
| | | | | | | | | | | | | | | | | | | |
| Kingman | | | | | | | | 1 | | 2 | | | | | | | 2 | |
| Kiowa | | | | | | | | | | 3 | | | | | | | 3 | |
| Labette | | | | 2 | | | | | | 3 | 1 | | 3 | 1 | | | | |
| Lane | | | | | | | | | | 3 | 2 | | 2 | | | | | |
| Leavenworth | | | 1 | 2 | | | | 1 | | 11 | 2 | | 1 | | | | 17 | 1 |
| Lincoln | | 2 | | | | | | | | 6 | | | 1 | | | 1 | 2 | |
| Linn | | | | | | | | | | 2 | | | 3 | | | | | |
| Logan | | | | | | | | | | 19 | | | 6 | 3 | | | 9 | |
| Lyon | 1 | | | 1 | | | 12 | 1 | | 3 | | | 1 | | | | | |
| Marion | | | 1 | 4 | 1 | | | | | | | | 1 | | | | | 1 |
| Marshall | | | | 2 | | | | | | 16 | | 1 | 3 | 2 | 1 | | | |
| McPherson | | | | | | | | | | 7 | | 1 | 3 | | | | 3 | 1 |
| Meade | | | | | 1 | | | | | 4 | 1 | 1 | 3 | | | | | |
| Miami | 1 | | | | | | 1 | | | 4 | | | 2 | | | | 2 | 1 |
| Mitchell | | | 1 | 1 | 1 | | | | | 1 | | | 2 | | | | | |
| Montgomery | | 1 | 1 | 1 | | | 1 | | | 4 | | 1 | 9 | | | | 1 | 1 |
| Morris | | | 1 | 1 | | | | | | 9 | | | 6 | | | | | |
| Morton | | | | | | | | | | 1 | | | | | | | | |
| Nemaha | | 1 | 2 | | 1 | | | | | 3 | | | 5 | 1 | | 10 | | |
| Neosho | | 2 | | 2 | 3 | | | | 6 | 3 | | 4 | 7 | 1 | 2 | 4 | | 1 |
| Ness | | | | | | | | | | 3 | | | 1 | | | | | |
| Norton | | | | | | | | | | 3 | | | | | | | 1 | |
| Osage | | 1 | | | 1 | 2 | | | | 11 | | | 3 | | 1 | 4 | | |
| Osborne | | | | | | | | | | 3 | | | | | | | | |
| Ottawa | | 1 | | | 2 | | | | | 2 | | | | | | 5 | | |
| Pawnee | | | | | | | | | | 3 | | | 2 | 1 | | | | |
| Phillips | | | | | | | | 1 | | 4 | | | 1 | 2 | | 1 | | |
| Pottawatomie | | | 1 | 1 | | | | | | 2 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | |
| Pratt | | | | | | | | | | 7 | | | 2 | | | | | |
| Rawlins | | | | | | | 2 | | | 2 | | | 4 | 2 | 2 | | | |
| Reno | | | 1 | 2 | 1 | | | | | 17 | | | 8 | | | | 4 | |
| Republic | | | | | | | 5 | | | 12 | | | 4 | 1 | | | 2 | |
| Rice | | | | | | | | | | 1 | | | 1 | | | | | |
| Riley | | 1 | 1 | 2 | 1 | | 1 | 1 | | 4 | | | 2 | 1 | | 1 | 3 | |
| Rooks | | | | | | | | | | 2 | | | | | | | | |
| Rush | | | 2 | | | | | | | 4 | | | 7 | | | | | |
| Russell | 3 | | | | | | 1 | | | 1 | | 1 | 1 | | | | | |
| Saline | | 2 | 2 | 1 | 1 | | | | | 5 | 1 | | 1 | 2 | | 1 | | |
| Scott | | | | | | | | | | 3 | | | | | | | | |
| Sedgwick | | 2 | | 16 | 1 | | 4 | | | 39 | | | 18 | 1 | | 5 | | |
| Seward | | | | | | | | | | 3 | | | | 2 | | | | |
| Shawnee | | | | | | | 1 | | | 2 | | | 1 | | | | | |
| Sheridan | | | | | | | | | | | | | 1 | | | | | |
| Sherman | | | | 1 | | | 1 | | | 2 | | | 1 | 1 | | 1 | | |
| Smith | | | | | | 3 | | | | 8 | | | 3 | | 1 | | | |
| Stafford | | | | | | | 1 | | | 5 | | | 8 | | | | 2 | |
| Stanton | | | | | | | | | | | | | | | | | | |

TABLE No. 6 - CONTINUED.

| COUNTIES. | GENERAL DISEASES. | | | | | | | | | | | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | |
|----------------|--------------------|----------|-------------------|------------------------------------|--------------------------------|---------------------------------|----------------|-----------|-----------------------------|----------------------------|-------------------------------|---------------------------------------------|----------------|-----------------|-----------------------------------------|
| | Chronic poisoning. | Measles. | Membranous croup. | Purulent infection and septicæmia. | Rheumatism - acute, articular. | Rheumatism - chronic, and gout. | Scarlet fever. | Syphilis. | Tuberculosis of the larynx. | Tuberculosis of the lungs. | Tuberculosis of the meninges. | Tuberculosis, abdominal. | Typhoid fever. | Whooping-cough. | Convulsions (not puerperal). |
| | | | | | | | | | | | | | | | Concussion and hemorrhage of the brain. |
| Stevens | | | | | | | | | | 11 | | | 1 | | 3 |
| Sumner | | 1 | | | | | | | | 2 | | | 1 | 2 | |
| Thomas | | | | | | | | | | | | | | | |
| Trego | | | | | | | 1 | | 1 | | | | | | |
| Wabannsee | | 1 | 1 | | 2 | | | | | 6 | | | 2 | | |
| Wallace | | | | | | | | | | | | | | | |
| Washington | | 1 | 1 | | 1 | | | | | 10 | | 3 | 6 | 1 | |
| Wichita | | | | | | | | | | 1 | | | 3 | | |
| Wilson | 1 | | | 2 | 3 | 1 | | | | 7 | | 1 | 6 | 1 | 2 |
| Woodson | | | | | | | | | 1 | 5 | | | 1 | 1 | 1 |
| Wyandotte | | | | | | | 2 | | | 13 | | | 2 | 1 | 3 |
| <i>Cities.</i> | | | | | | | | | | | | | | | |
| Atchison | 12 | | | | 1 | 1 | 1 | | | 20 | 1 | 3 | 3 | 2 | 1 |
| Coffeyville | | | 2 | | | | | | | 7 | | 2 | 6 | | 1 |
| Kansas City | | | 2 | 16 | 6 | | 1 | 5 | 34 | 99 | 4 | 13 | 24 | 11 | 3 |
| Leavenworth | | 1 | | 3 | | | 4 | | | 19 | 1 | | 7 | 2 | 2 |
| Parsons | | | 3 | | | 2 | | | | 16 | 1 | | 6 | 1 | 4 |
| Pittsburg | | | | | | | | | | | | | | | |
| Topeka | | | | 1 | 1 | 1 | 1 | | 3 | 42 | 15 | 2 | 17 | 4 | 1 |
| Wichita | | | | | | | | | | | | | | | |
| Totals | 17 | 33 | 40 | 101 | 521 | 16 | 75 | 14 | 40 | 823 | 31 | 46 | 345 | 83 | 158 |

TABLE No. 6—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | CIRCULATORY APPARATUS. | | | | | | |
|------------|---------------------------------------------|----------|--------------------|-------------------------|-------------|----------------|-----------|---------|-----------------------------------|-------------------------------|------------------------------------|----------|--------------------------------------------|------------------------------------------------------------|------------------|-------------------------|---------------|
| | Convulsions of infants. | Epilepsy | General paralysis. | Other forms of insanity | Meningitis. | | | | Paralysis without specific cause. | Progressive locomotor ataxia. | Other diseases of the spinal cord. | Tetanus. | Affections of the arteries, aneurism, etc. | Affections of the veins, varicose, hemorrhoids, phlebitis. | Angina pectoris. | Embolus and thrombosis. | Endocarditis. |
| | | | | | Simple. | Cerebrospinal. | Cerebral. | Spinal. | | | | | | | | | |
| Allen | | 3 | 1 | | 5 | | | | | | | | 2 | | | 1 | |
| Anderson | | | 3 | | | | | | | | | | 4 | | | | |
| Atchison | | | 3 | | | | | | | 1 | | | | | | | |
| Barber | | | | | | | | | | | | | | | | | |
| Barton | 1 | | 3 | 1 | 1 | | | | | | | | 1 | | 2 | 1 | |
| Bourbon | 8 | 1 | 20 | | 1 | | | 2 | 1 | | | | | | | | |
| Brown | | | 8 | | | | | 3 | | | | | | | | | |
| Butler | | | 13 | | | | | | | | | | | | | | |
| Chase | 2 | | 4 | | | | | | | | | | | | | | |
| Chautauqua | | | | | | | | | | | | | | | | | |
| Cherokee | 6 | | 13 | | 2 | | | | 1 | 1 | 2 | 2 | 2 | 2 | | | 1 |
| Cheyenne | | | | | | | | | | | | 1 | | | | | |
| Clark | | | | | | | | | | | | | | | | | |
| Clay | | 1 | | | 1 | 2 | | 6 | 2 | | | | | | | | |
| Cloud | | | | | | | | | | | | | | | | | 8 |
| Coffey | | | | 11 | 3 | 1 | 1 | 1 | | | 1 | | | | | | |
| Comanche | | | | | | | | | | | | | | | | | |
| Cowley | | 1 | | | | 4 | | 11 | | | 2 | | | | | | |
| Crawford | | 2 | | | 4 | 8 | 3 | 10 | 1 | | | 2 | 2 | 3 | | | 5 |
| Dacatur | | | | | 1 | | 1 | | | | | | | | | | |
| Dickinson | 2 | | 4 | | | | | | | | 3 | | | | | | |
| Doniphan | | | | | 1 | | 1 | 2 | | | | | | | | 1 | 1 |
| Douglas | 6 | 1 | 8 | | 1 | | | 2 | 1 | | 4 | 1 | 2 | | | | 3 |
| Edwards | | | | | 2 | | | | | | | | | | | | |
| Elk | | | | | | | | | | | | | | | | | |
| Ellis | 5 | | | | | | 1 | 1 | | | 1 | | | | 2 | | |
| Ellsworth | | | | | 1 | | 1 | 3 | 2 | | | | | | | | |
| Finnery | | | 5 | | 1 | 1 | | | | | | | | | | | |
| Ford | | | | | | | | 3 | | | | | | | 1 | 1 | |
| Franklin | | | | | 1 | | | 13 | | | | 3 | | 1 | | | |
| Geary | | 1 | | 3 | | | | 5 | 3 | | | | | | | | |
| Gove | | | 2 | | | | | | | | | | | | | | |
| Graham | | | | | | 2 | | | | | | | | | | | 2 |
| Grant | | | | | | | | | | | | | | | | | |
| Gray | | | 2 | | | 1 | | | 1 | | | | | | | | |
| Greeley | | | | | | | | | | | | | | | | | |
| Greenwood | 1 | | 8 | | | | | | | | | 3 | | | | | |
| Hamilton | 1 | | | | | | | | | | | 10 | | | | | |
| Harper | 1 | 4 | | | | | | | 1 | | 1 | | | | | | |
| Harvey | | 1 | | | | | | 10 | | | 1 | 1 | | | | | 2 |
| Haskell | | | | | | | | 1 | | | | | | | | | |
| Hodgeman | | | | | | | | 3 | | | | | | | | | |
| Jackson | | | | | | | | 4 | 1 | | 1 | 1 | | 1 | | | |
| Jefferson | | 2 | 2 | | | | | | | | | | | | | | |
| Jewell | | | | | | | | 11 | | | | | | | | | |
| Johnson | | | 1 | | | | | | 1 | | | | | | | | |
| Kearny | | | | | | | | | | | | | | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | CIRCULATORY APPARATUS. | | | | | | |
|--------------|---------------------------------------------|-----------|--------------------|--------------------------|-------------|----------------|-----------|---------|-----------------------------------|-------------------------------|------------------------------------|----------|------------------------------------------------------|-----------------------------------------------------------|------------------|-------------------------|---------------|
| | Convulsions of infants. | Epilepsy. | General paralysis. | Other forms of insanity. | Meningitis. | | | | Paralysis without specific cause. | Progressive locomotor ataxia. | Other diseases of the spinal cord. | Tetanus. | Affectious of the arteries, atheroma, aneurism, etc. | Affectious of the veins, varices, hemorrhoids, phlebitis. | Angina pectoris. | Embolus and thrombosis. | Endocarditis. |
| | | | | | Simple. | Cerebrospinal. | Cerebral. | Spinal. | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| Kingman | | | 1 | | | | 1 | 1 | 5 | | | 1 | | | | | 1 |
| Kiowa | | | | | | | | | | | | | | | | | |
| Labette | | | | | | | | | | | | | | | | | |
| Lane | | 1 | | | | 1 | | 2 | 1 | | 1 | | | | 1 | | |
| Leavenworth | | | | | | | | | | | | | | | | | |
| Lincoln | 1 | | | | | | 1 | | 5 | | | | | | | | |
| Linn | | | | | | | | | | | | | | | | | |
| Logan | | | | | | | | | | | | | | | | | |
| Lyon | | | | | | | | | | | | | 2 | | | | 1 |
| Marion | 1 | | | 1 | | | | | 6 | | | | 1 | | | | 8 |
| Marshall | 2 | | 6 | 1 | | | | | 7 | 2 | | 1 | | 1 | | | |
| McPherson | | | | 2 | | 1 | | | 1 | | | | | 1 | | | |
| Meade | | | 1 | | | | | | | | | | | | | | |
| Miami | | | 1 | | | | | | | | | | 1 | | 1 | | |
| Mitchell | | | 1 | | | | | | 8 | | | | | | | | |
| Montgomery | | | 7 | | | | | | | | | | | | | | 2 |
| Morris | | | 5 | | | | | | | | | | | | | | 2 |
| Morton | | 1 | 7 | 1 | | | | 8 | | | | | 4 | | | 1 | |
| Nemaha | | | 4 | | 2 | | | | | 1 | | | | | | | |
| Neosho | 1 | | | | | | | | | | | | | | | | |
| Ness | | | 1 | | 3 | | | | | | | | | | | | 2 |
| Norton | | | 14 | | | | | 8 | | | | | 1 | | | | |
| Osgae | | | 2 | | | | | | | | | | | | | | |
| Osborne | | | | | | | | | | | | | | | 1 | | |
| Ottawa | | | | | | | | | | | | | | | | | |
| Pawnee | 1 | | | | | | | | | | | | 1 | | | | |
| Phillips | | | 1 | 1 | 1 | 2 | | | 1 | | | | | | 1 | | |
| Pottawatomie | | | 2 | | | | | | | | | | | | | 2 | |
| Pratt | | 1 | | | | | | | | | | | | | | | |
| Rawlins | | | | | | | | | | | | | | | | | |
| Reno | | | | | 3 | | | | 9 | | | | | | | | |
| Republic | 1 | | | | | | | | 1 | | 1 | | | | | 1 | |
| Rice | | | | | | | | | | | | | | | | | |
| Riley | 2 | | 1 | 1 | | 1 | | | | 1 | | | | | 1 | | 2 |
| Books | | | | | | | | | | | | | | | | | |
| Rush | | | | | 1 | | | | | | | | | | | | |
| Russell | | | 9 | | | | | | | | | | | | | | |
| Saline | 6 | | | 2 | | | | | 10 | | 1 | 1 | | | | | |
| Scott | | | | | | | | | | | | | | | | | |
| Sedgwick | | 2 | | 1 | 11 | | | | 30 | 1 | | 2 | 3 | | 2 | | 4 |
| Seward | | | | | | | | | | | | | | | | | |
| Shawnee | | | | | | | | | 3 | | | | | | | | |
| Sheridan | | | | | | | | | | | 1 | | | | | | |
| Sherman | | | 4 | | | | | | 1 | | | | | | | | 1 |
| Smith | 3 | 1 | 1 | | | | | | | | | | | | | | |
| Stafford | | | 1 | | | | | | | | | | | | | | |
| Stanton | | | | | | | | | | | | | | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | CIRCULATORY APPARATUS. | | | | | | |
|--------------|---------------------------------------------|-----------|--------------------|--------------------------|-------------|----------------|-----------|---------|-----------------------------------|-------------------------------|------------------------------------|----------|--------------------------------------------|------------------------------------------------------------|------------------|-------------------------|---------------|
| | Convulsions of infants. | Epilepsy. | General paralysis. | Other forms of insanity. | Meningitis. | | | | Paralysis without specific cause. | Progressive locomotor ataxia. | Other diseases of the spinal cord. | Tetanus. | Affections of the arteries, aneurism, etc. | Affections of the veins, varicose, hemorrhoids, phlebitis. | Angina pectoris. | Embolus and thrombosis. | Endocarditis. |
| | | | | | Simple. | Cerebrospinal. | Cerebral. | Spinal. | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| Stevens. | | | | | | | | | | | | | | | | | 5 |
| Sumner. | | | 9 | | | | | | 1 | | | | | | | 1 | |
| Thomas. | | | | | | | | | 1 | | | | | | | | |
| Trego. | | | | | | | | | 1 | | | 1 | | | | 1 | |
| Wabaunsee. | 2 | | | | 2 | | | | 4 | | | | | | | | |
| Wallace. | | | | | | | | | | | | | | | | | |
| Washington. | 8 | 1 | | | 1 | | | | 9 | 1 | | 1 | 8 | | 1 | | 1 |
| Wichita. | | | | | | | | | | | | | | | | | |
| Wilson. | 1 | | 12 | | 1 | 1 | | 2 | 2 | | | | | | | | 1 |
| Woodson. | | | | | | 1 | | | 4 | | | | 1 | | 1 | | |
| Wyandotte. | | | | | 1 | 1 | | | 2 | | 1 | | | | | | 1 |
| Cities. | | | | | | | | | | | | | | | | | |
| Atchison. | 1 | 1 | 4 | | 1 | | | | | | | | | | | | |
| Coffeyville. | 2 | | 1 | | | | | | | | | | | | | | |
| Kansas City. | 4 | | 16 | 8 | 19 | 4 | 1 | 2 | 16 | 1 | 4 | 1 | 4 | 4 | 3 | 6 | 8 |
| Leavenworth. | | 1 | | | 1 | 1 | 1 | 1 | 15 | | 1 | 2 | | | | | 1 |
| Parsons. | 1 | 8 | | 1 | | | | | 6 | | | | | | | | |
| Pittsburg. | | | | | | | | | | | | | | | | | |
| Topeka. | 7 | 2 | | 1 | 7 | 2 | 8 | 3 | 15 | | 4 | 2 | 1 | | 1 | 5 | |
| Wichita. | | | | | | | | | | | | | | | | | |
| Totals. | 78 | 36 | 221 | 17 | 81 | 39 | 19 | 29 | 243 | 18 | 15 | 29 | 56 | 11 | 25 | 21 | 60 |

TABLE No. 6—CONTINUED.[illegible]

TABLE No. 6—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | | CIRCULATORY APPARATUS. | | | | |
|------------|---------------------------------------------|-----------|--------------------|--------------------------|-------------|----------------|-----------|-----------------------------------|-------------------------------|------------------------------------|----------|------------------------------------------------------------|--------------------------------------------|--------------------------|---------------|---------|
| | Convulsions of infants. | Epilepsy. | General paralysis. | Other forms of insanity. | Meningitis. | | | Paralysis without specific cause. | Progressive locomotor ataxia. | Other diseases of the spinal cord. | Tetanus. | Affections of the valves, varicose hemorrhoids, phlebitis. | Affections of the arteries, aneurism, etc. | Embolism and thrombosis. | Endocarditis. | |
| | | | | | Stimple. | Cerebrospinal. | Cerebral. | | | | | | | | | |
| | | | | | | | | | | | | | | | | Spinal. |
| Allen | | 3 | 1 | | 5 | | | | | | | 2 | | 1 | | |
| Anderson | | | 3 | | | | | | | | | 4 | | | | |
| Atchison | | | 3 | | | | | | | 1 | | | | | | |
| Barber | | | | | | | | | | | | | | | | |
| Barton | 1 | | 3 | 1 | 1 | | | | | | | 1 | 2 | 1 | 1 | |
| Bourbon | 8 | 1 | 20 | | 1 | | | 2 | 1 | | | | | | | |
| Brown | | | 8 | | | | | | | | | | | | | |
| Butler | | | 13 | | | | | | | | | | | | | |
| Chase | 2 | | 4 | | | | | | | | | | | | | |
| Chautauqua | | | | | | | | | | | | | | | | |
| Cherokee | 6 | | 13 | | 2 | | | | 1 | 1 | 2 | 2 | 2 | | 1 | |
| Cheyenne | | | | | | | | 2 | | | | 1 | | | | |
| Clark | | 1 | | | 1 | 2 | | 6 | 2 | | | | | | | |
| Clay | | | | | | | | | | | | | | | 8 | |
| Cloud | | | | | | | | | | | | | | | | |
| Coffey | | | 11 | | 3 | 1 | 1 | 1 | | | 1 | | | | | |
| Comanche | | | | | | | | | | | | | | | | |
| Cowley | | 1 | | | | 4 | | 11 | | 2 | | | | | | |
| Crawford | | 2 | | | 4 | 8 | 3 | 10 | 1 | | | 2 | 3 | | 5 | |
| Decatur | | | | | 1 | | 1 | | | | | | | | | |
| Dickinson | 2 | | 4 | | | | | | | | 3 | | | | | |
| Doniphan | | | | | 1 | | 1 | 2 | | | | | | | 1 | |
| Douglas | 6 | 1 | 8 | | 1 | | | 2 | 1 | | 4 | 1 | 2 | 1 | 3 | |
| Edwards | | | | | 2 | | | | | | | | | | | |
| Elk | | | | | | | | | | | | | | | | |
| Ellis | 5 | | | | | | 1 | | | | 1 | | | 2 | | |
| Ellsworth | | | | | 1 | | 1 | 3 | 2 | | | | | | | |
| Finney | | | 5 | | 1 | 1 | | | | | | | | | | |
| Ford | | | | | 1 | | | 3 | | | | 2 | | 1 | 1 | |
| Franklin | | | | | 1 | | | 13 | | | | 3 | 1 | | | |
| Geary | | 1 | | 3 | | | | 5 | 3 | | | | | | | |
| Gove | | | 2 | | | | | | | | | | | | | |
| Graham | | | | | | 2 | | | | | | | | | 2 | |
| Grant | | | | | | | | | | | | | | | | |
| Gray | | | 2 | | | 1 | | 1 | | | | | | | | |
| Greeley | | | | | | | | | | | | | | | | |
| Greenwood | 1 | | 8 | | | | | | | | | 3 | | | | |
| Hamilton | 1 | | | | | | | | | | | 10 | | | | |
| Harper | 1 | 4 | | | | | | | 1 | 1 | | | | | | |
| Harvey | | 1 | | | | | | 10 | | | 1 | 1 | | | 2 | |
| Haskell | | | | | | | | 3 | | | | | | | | |
| Hodgeman | | | | | | | | 1 | | | | | | | | |
| Jackson | | | | | | | | 4 | 1 | | 1 | 1 | 1 | | | |
| Jefferson | | 2 | 2 | | | | | | | | | | | | | |
| Jewell | | | | | | | | 11 | | | | | | | | |
| Johnson | | | 1 | | | | | | 1 | | | | | | | |
| Kearny | | | | | | | | | | | | | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | CIRCULATORY APPARATUS. | | | | | | |
|--------------|---------------------------------------------|-----------|----------------|--------------------------|-------------|----------------|-----------|-----------------------------------|-------------------------------|------------------------------------|------------------------|--------------------------------------------|------------------------------------------------------------|------------------|-------------------------|---------------|---|
| | Convulsions of infants. | Epilepsy. | General palsy. | Other forms of insanity. | Meningitis. | | | Paralysis without specific cause. | Progressive locomotor ataxia. | Other diseases of the spinal cord. | Tetanus. | Affections of the arteries, aneurism, etc. | Affections of the veins, varicose, hemorrhoids, phlebitis. | Angina pectoris. | Embolus and thrombosis. | Endocarditis. | |
| | | | | | Simple. | Cerebrospinal. | Cerebral. | | | | | | | | | | |
| Kingman | | | | | | | | | | | | | | | | | 1 |
| Kiowa | | | 1 | | | | | | | | | | | | | | |
| Labette | | | | | | 1 | | 1 | 5 | | | | | | | | |
| Lane | | | | | | | | | | | | | | | | | |
| Leavenworth | | 1 | | | | 1 | | 2 | 1 | 1 | | | | 1 | | | |
| Lincoln | 1 | | | | | | 1 | | 5 | | | | | | | | |
| Linn | | | | | | | | | | | | | | | | | |
| Logan | | | | | | | | | | | | | | | | | |
| Lyon | | | | | | | | | | | | | 2 | | | | 1 |
| Marion | 1 | | | 1 | | | | | 6 | | | 1 | | | | | 3 |
| Marshall | | 2 | | | | | | | 7 | 2 | | 1 | | 1 | | | |
| McPherson | | | 6 | | 1 | | | | | | | | | | | | |
| Meade | | | | 2 | | | | | 1 | | | | | | | | |
| Miami | | | 1 | | | 1 | | | | | | | | | | | |
| Mitchell | | | 1 | | | | | | 3 | | | 1 | | 1 | | | |
| Montgomery | | | 7 | | | | | | | | | | | | | | 2 |
| Morris | | | 5 | | | | | | | | | | | | | | |
| Morton | | | | | | | | | | | | | | | | | 2 |
| Nemaha | 1 | 1 | 7 | | 1 | | | 3 | | | | 4 | | | 1 | 1 | |
| Neosho | 1 | | 4 | | | 2 | | | | 1 | | | | | | | |
| Ness | | | | | | | | | | | | | | | | | |
| Norton | | | 1 | | 3 | | | | | | | | | | | | 2 |
| Osage | | | 14 | | | | | 3 | | | | | 1 | | | | |
| Osborne | | | 2 | | | | | | | | | | | | | | |
| Ottawa | | | | | | | | | | | | | | 1 | | | |
| Pawnee | 1 | | | | | | | | | | | | 1 | | | | |
| Phillips | | | 1 | | | | | | | | | | | | 1 | | |
| Pottawatomie | | | | 1 | 1 | 2 | | | 1 | | | | | | | | |
| Pratt | | | 2 | | | | | | | | | | | | | | |
| Rawlins | 1 | 1 | | | | | | | | | | | | 2 | | | |
| Reno | | | | | 3 | | | | 9 | | | | | | | | |
| Republic | 1 | | | | | | | | 1 | | 1 | | | | | 1 | |
| Rice | | | | | | | | | | | | | | | | | |
| Riley | 2 | | 1 | 1 | | 1 | | | | 1 | | | | 1 | | | 2 |
| Rooks | | | | | | | | | | | | | | | | | |
| Rush | | | | | 1 | | | | | | | | | | | | |
| Russell | | | 9 | | | | | | | | | | | | | | |
| Saline | 5 | | | | 2 | | | | 10 | 1 | 1 | | | | | | |
| Scott | | | | | | | | | | | | | | | | | |
| Sedgwick | | 2 | | 1 | 11 | | | | 30 | 1 | 2 | 3 | | 2 | | | 4 |
| Seward | | | | | | | | | | | | | | | | | |
| Shawnee | | | | | | | | | 3 | | | | | | | | |
| Sheridan | | | | | | | | | | 1 | | | | | | | |
| Sherman | | | 4 | | | | | | | 1 | | | | | | | 1 |
| Smith | 3 | 1 | 1 | | | | | | | | | | | | | | |
| Stafford | | | 1 | | | | | | | | | | | | | | |
| Stanton | | | | | | | | | | | | | | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | | | | | | | | | | CIRCULATORY APPARATUS. | | | | | | | |
|----------------|---------------------------------------------|-----------|--------------------|--------------------------|-------------|----------------|-----------|---------|-----------------------------------|-------------------------------|------------------------------------|----------|----------------------------------------------------|-----------------------------------------------------------|------------------|-------------------------|---------------|--|
| | Convulsions of infants. | Epilepsy. | General paralysis. | Other forms of insanity. | Meningitis. | | | | Paralysis without specific cause. | Progressive locomotor ataxia. | Other diseases of the spinal cord. | Tetanus. | Affections of the arteries, arterio-aneurism, etc. | Affections of the veins, varices, hemorrhoids, phlebitis. | Angina pectoris. | Embolus and thrombosis. | Endocarditis. | |
| | | | | | Simple. | Cerebrospinal. | Cerebral. | Spinal. | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| Stevens. | | | 9 | | | | | | 1 | | | | | | | 1 | 5 | |
| Sumner. | | | | | | | | | 1 | | | | | | | | | |
| Thomas. | | | | | | | | | 1 | | | | | | | | | |
| Trego. | | | | | | | | | 1 | | | | | | | | | |
| Wabaunsee. | 2 | | | | 2 | | | | 4 | | | 1 | 1 | | | 1 | | |
| Wallace. | | | | | | | | | | | | | | | | | | |
| Washington. | 3 | 1 | | | 1 | | | | 9 | 1 | | 1 | 3 | | 1 | | 1 | |
| Wichita. | | | | | | | | | | | | | | | | | | |
| Wilson. | 1 | | 12 | | 1 | 1 | | 2 | 2 | | | | | | | | 1 | |
| Woodson. | | | | | | 1 | | | 4 | | | | 1 | | 1 | | | |
| Wyandotte. | | | | | | 1 | 1 | | 2 | | 1 | | | | | | 1 | |
| <i>Cities.</i> | | | | | | | | | | | | | | | | | | |
| Atchison. | 1 | 1 | 4 | | 1 | | | | | | | | | | | | | |
| Coffeyville. | 2 | | 1 | | | | | | | | | | | | | | | |
| Kansas City. | 4 | | 16 | 8 | 19 | 4 | 1 | 2 | 16 | 1 | 4 | 1 | 4 | 4 | 3 | 6 | 8 | |
| Leavenworth. | | 1 | | | | 1 | 1 | 1 | 15 | | 1 | 2 | | | | | 1 | |
| Parsons. | | 1 | 8 | | 1 | | | | 6 | | | | | | | | | |
| Pittsburg. | | | | | | | | | | | | | | | | | | |
| Topeka. | 7 | 2 | | 1 | 7 | 2 | 8 | 3 | 15 | | 4 | 2 | 1 | | 1 | 5 | | |
| Wichita. | | | | | | | | | | | | | | | | | | |
| Totals. | 73 | 36 | 221 | 17 | 81 | 39 | 19 | 29 | 243 | 18 | 15 | 29 | 56 | 11 | 25 | 21 | 60 | |

TABLE No. 6—CONTINUED.

| COUNTIES. | CIRCULATORY APPARATUS. | | RESPIRATORY SYSTEM. | | | | | | | | | | DIGESTIVE APPARATUS. | | | | |
|--------------|------------------------|-------------------------------------------|-------------------------|-------------------|--------------------------|---------|-------------------|---------------------|---------------------------------------------------------|----------|------------|------------------------------------------------------------------|----------------------------------------------|------------------|--------------------------------|------------------------|-------------------------------------------|
| | Hemorrhages. | Other diseases of the circulatory system. | Organic heart diseases. | Acute bronchitis. | Affections of the larynx | Asthma. | Bronchopneumonia. | Chronic bronchitis. | Congestion of the lungs (including pulmonary apoplexy). | Pleurisy | Pneumonia. | Other diseases of the respiratory apparatus (phthisis excepted). | Appendicitis and abscess of the iliac fossa. | Biliary calculi. | Other affections of the liver. | Cirrhosis of the liver | Diarrhea and enteritis (under five years) |
| Kingman | | | 1 | | | | | | | | 3 | | | 1 | | | |
| Kiowa | | | | | | | | | | 1 | 10 | | | 1 | | | |
| Labette | | | 6 | | | | | 1 | | | | | | 1 | | | |
| Lane | | | 1 | | | | | | 1 | | | 1 | | | | | |
| Leavenworth | 1 | 6 | 15 | | | | 1 | 5 | 1 | 1 | 6 | | 1 | | | | |
| Lincoln | | | 5 | | | | | | | | 2 | | 1 | | | 2 | |
| Linn | | | | | | | | | | | 2 | | | | | | |
| Logan | | | | | | | | | | | 15 | | | | | | |
| Lyon | | 3 | 25 | 1 | | 1 | 1 | | | 1 | 2 | 1 | | | | | |
| Marion | | | 2 | | | | | | | | 4 | | 1 | | 1 | | |
| Marshall | 2 | | 20 | 5 | | | | | | | 22 | | 2 | | | | |
| McPherson | 2 | | 15 | | | | | | | | 12 | | 1 | 1 | | | |
| Meade | | | | | | | 1 | 1 | | | 1 | | | | 2 | | |
| Miami | | | 13 | | | | | 1 | | | 3 | | | | | | |
| Mitchell | | 3 | 8 | | 1 | 4 | | | | | 6 | 1 | 1 | | 2 | | |
| Montgomery | | | 4 | 3 | | | | | 1 | | 8 | | 3 | | 1 | 1 | |
| Morris | | 1 | 7 | | | | 1 | | | | 1 | | 4 | | | | |
| Morton | | | | | | | | | | | | | | | | | |
| Nemaha | | | 18 | | | 1 | | | | | 14 | 3 | 5 | 2 | 2 | | |
| Neosho | 1 | | 13 | | | | | 1 | 1 | 2 | 15 | | 3 | | | 1 | |
| Ness | | | | | | | 2 | | 1 | | 1 | | 1 | | | 1 | |
| Norton | | | 1 | | | | 1 | | | | 2 | | | | | 1 | |
| Osage | | | 14 | 3 | | 4 | | | | 1 | 17 | | 1 | 4 | | 6 | |
| Osborne | | | 3 | | | | 5 | | | | | | 3 | | | | |
| Ottawa | | | 2 | | 1 | | | | | | 2 | | | 1 | | | |
| Pawnee | | | 2 | | | 1 | | | | | | | | | | | |
| Phillips | | 2 | 4 | | | 2 | | | | | 15 | | | 1 | 1 | | |
| Pottawatomie | | | 6 | 1 | | 2 | | 1 | 10 | | 16 | | | | | | 1 |
| Pratt | | | 3 | | | | | | | | 1 | | | | 1 | | |
| Rawlins | | | | | | | | | 1 | | 2 | | 1 | | | | |
| Reno | | | 5 | | | | | | 5 | | 16 | | 5 | | | 3 | 4 |
| Republic | 1 | 2 | 1 | | 1 | 1 | 2 | | | | 11 | | | | | | 1 |
| Rice | | | | | | | | | | | | | | | | | |
| Riley | | | 1 | 2 | | | 2 | | | | 8 | | 4 | 1 | | | |
| Rooks | | | | | | | | | | | | | | | | | |
| Rush | | | | 7 | | | 4 | 2 | 4 | | 4 | | | | | | |
| Russell | | | 3 | | | | | | | | 3 | | | | | 1 | |
| Saline | | 3 | | | | | | | | | 16 | 1 | 4 | | | 2 | |
| Scott | | | | | | | | | | | | | | | | | |
| Sedgwick | | 21 | 38 | 3 | | | | | 1 | | 37 | 4 | 4 | 2 | | 1 | |
| Seward | | | 1 | | | | | | | | | | | | | | |
| Shawnee | | | 2 | | | | | | | | 3 | | | | | | |
| Sheridan | | | 1 | | | | 1 | | | | 2 | | | | 1 | | |
| Sherman | | | 4 | | | | | | | | 6 | | 1 | | | | |
| Smith | | | 4 | | | | | | | | 3 | | | | | | |
| Stafford | | | | | | | | | | | | | | | | | |
| Stanton | 1 | | 7 | | | | | | | | 3 | | 4 | 2 | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | CIRCULATORY APPARATUS. | | RESPIRATORY SYSTEM. | | | | | | | | | | DIGESTIVE APPARATUS. | | | | | |
|--------------|------------------------|-------------------------------------------|-------------------------|-------------------|---------------------------|---------|-------------------|---------------------|---------------------------------------------------------|-----------|------------|------------------------------------------------------------------|----------------------------------------------|------------------|--------------------------------|--------------------------|--------------------------------------------|--|
| | Hemorrhages. | Other diseases of the circulatory system. | Organic heart diseases. | Acute bronchitis. | Affections of the larynx. | Asthma. | Bronchopneumonia. | Chronic bronchitis. | Congestion of the lungs (including pulmonary apoplexy). | Pleurisy. | Pneumonia. | Other diseases of the respiratory apparatus (phthisis excepted). | Appendicitis and abscess of the iliac fossa. | Biliary calculi. | Other affections of the liver. | Chirrhosis of the liver. | Diarrhea and enteritis (under five years). | |
| Stevens. | | | 19 | | | | 5 | | | | 14 | | | | | | | |
| Sumner. | | | 1 | | | | 2 | | 1 | | | | | | | | 1 | |
| Thomas. | | | 3 | | | | | | | | | | | | | | 1 | |
| Trego. | 1 | | 3 | | | 1 | | | | | 2 | | | | | | 1 | |
| Wabaunsee. | | | 17 | | | 2 | | | | | 10 | | | | | | | |
| Wallace. | | | | | | | | | | | | | | | | | | |
| Washington. | | 2 | 2 | 1 | | 1 | 2 | | 1 | | 14 | | 1 | | 1 | | | |
| Wichita. | | | | | | | | | | | | | | | | | | |
| Wilson. | 2 | | 20 | 1 | | 2 | | | | | 10 | | 4 | | 1 | | 5 | |
| Woodson. | 1 | | 9 | | | 1 | | | | | 3 | | 2 | | | | | |
| Wyandotte. | 8 | 6 | 7 | | | | | 1 | | | 14 | | | | | | 1 | |
| Cities. | | | | | | | | | | | | | | | | | | |
| Atchison. | 4 | | 18 | | | 3 | | | | | 14 | | 1 | | | 1 | | |
| Coffeyville. | | | 3 | | | 1 | 2 | | 2 | | 2 | | 1 | | | | | |
| Kansas City. | 5 | 8 | 58 | 17 | 3 | 3 | 10 | 3 | 9 | | 114 | 16 | 4 | | 7 | 9 | 10 | |
| Leavenworth. | 3 | 5 | 25 | 2 | | 5 | 1 | | 1 | | 37 | | 1 | 1 | | 1 | | |
| Parsons. | 1 | 1 | 24 | 1 | 2 | 1 | 1 | | | | 17 | | 2 | | | | 2 | |
| Pittsburg. | | | | | | | | | | | | | | | | | | |
| Topeka. | 2 | | 47 | | 1 | 3 | | 5 | 4 | | 68 | 4 | 7 | 4 | 2 | 6 | 1 | |
| Wichita. | | | | | | | | | | | | | | | | | | |
| Totals. | 55 | 82 | 769 | 69 | 13 | 57 | 78 | 31 | 51 | 11 | 970 | 38 | 122 | 34 | 45 | 58 | 99 | |

TABLE No. 6—CONTINUED.

| COUNTIES. | DIGESTIVE APPARATUS. | | | | | | GENITO-URINARY APPARATUS AND ITS ADNEXA. | | | | | | PUERPERAL STATE. | | | | |
|------------------|------------------------------------------------|---------------------------------------|---------------------------------------|----------------------|----------------------------------|-----------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|-----------------------|------------------------|-----------------------------------------------------|--------------------------------------|------------------------------|-------------------------------|----------------------------------|-----------------------------|---------------------------|
| | Diarrhea and enteritis (over five years) | Hernia and intestinal obstructions... | Other affections of the intestines... | Icterus gravis | Peritonitis (not puerperal)..... | Other affections of digestive apparatus (except cancer and tubercle). | Ulcer of the stomach..... | Other affections of the stomach (cancer excepted)..... | Acute nephritis | Bright's disease | Other diseases of the kidneys and their adnexa..... | Cysts and other tumors of the ovary. | Diseases of the bladder..... | Diseases of the prostate..... | Uterine tumor (not cancer) | Accidents of pregnancy..... | Puerperal hemorrhage..... |
| Allen | 1 | | | | 1 | 2 | 1 | | | 1 | | | 1 | | 1 | 4 | |
| Anderson | | | | | 1 | 1 | | | | | | | | | | | |
| Atchison | | | | | | | | | | | | | | | | | |
| Barber | | | | | | | | | | | | | | | | | |
| Barton | 3 | 1 | | | 1 | 10 | | 1 | | 1 | | | | | | | |
| Bourbon | 3 | | 2 | | 4 | 1 | | | | 12 | | 1 | | | | | |
| Brown | | | | | | | | | | 3 | | | | | | 1 | |
| Butler | | | | | 1 | | | | 2 | 5 | | | 2 | 3 | | | |
| Chase | | | | | | | | | | | | | | | | | |
| Chautauqua | | | | | | | | | | | | | | | | | |
| Cherokee | 1 | 1 | 2 | | 4 | | 3 | 14 | 3 | 2 | 2 | | 3 | | | 1 | |
| Cheyenne | | | | | | | | | | 1 | | | | | | | |
| Clark | | | | | 2 | | | 6 | 1 | 4 | | | | | 1 | | |
| Clay | 1 | | | | | | | | | 12 | | | | | | | |
| Cloud | | | | | | | | | | | | | | | | | |
| Coffey | | | | | 2 | 1 | 2 | | 2 | 7 | | | | | | | |
| Comanche | | | | | | | | | | | | | | | | | |
| Cowley | | 2 | | | | | | 14 | | 9 | | 1 | | | | | |
| Crawford | 1 | 3 | | 2 | 6 | | | 9 | 5 | 7 | 2 | 1 | | 1 | | | |
| Decatur | | | | | | | | | 1 | | | | | | | | |
| Dickinson | | 1 | 6 | | 1 | | | 2 | | 3 | 3 | | | | | 1 | |
| Doniphan | | | | | | 2 | | 2 | | | | | | | | | |
| Douglas | 11 | 3 | 2 | 1 | 2 | | | 6 | 4 | 6 | 1 | 3 | 5 | 2 | 4 | 3 | 1 |
| Edwards | | | | | | | | | 2 | | | | | | | | |
| Elk | | 1 | | 1 | | | | | 1 | | | | | | | | |
| Ellis | | 2 | | | | | | 3 | 2 | 4 | | | | 1 | | | |
| Ellsworth | | 1 | 1 | | 4 | | 1 | | | 1 | | | | | | | 1 |
| Finney | | 1 | | | | | | 2 | | 1 | | | | | | 1 | |
| Ford | 6 | | | | 1 | | 2 | 1 | 1 | 1 | | | 1 | | | | 1 |
| Franklin | | | | | 2 | | 1 | 2 | 1 | 14 | | | | | | | |
| Geary | | 1 | | | | | | | | 5 | | | | | | | 1 |
| Gove | 1 | | | | 1 | | | | | 1 | | | | | | | |
| Graham | 1 | | | | | | | | | | | | | | | | |
| Grant | | | | | | | | | | | | | | | | | |
| Gray | | | | | | | | | 1 | | 1 | | | | | | |
| Greeley | | | | | | | | | | | | | | | | | |
| Greenwood | | | | | 3 | 1 | | 1 | 1 | 2 | | | | 1 | | | |
| Hamilton | | | | | | | 1 | | | 2 | | | | | | 1 | |
| Harper | | 4 | | | 1 | | | | 1 | 2 | | | | | | | |
| Harvey | | | | | | 2 | | | 1 | 6 | | | | | | | |
| Haskell | | | | | | | | | | | | | | | | | |
| Hodgeman | | 1 | 1 | | | | | | | 2 | | | | | | | |
| Jackson | | | | | 3 | | | 3 | | 4 | 1 | | | | | | |
| Jefferson | | 1 | 1 | | 2 | 4 | 1 | | 1 | 3 | 2 | | | | | | |
| Jewell | 1 | | | | 1 | | | 1 | 2 | 3 | 3 | | | 2 | | | |
| Johnson | | | | | | | | | 1 | | | | | 1 | | 1 | |
| Kearny | | | | | | | | | | | | | | | | | |

TABLE No. 6 — CONTINUED.

| COUNTIES. | DIGESTIVE APPARATUS. | | | | | | GENITO-URINARY APPARATUS AND ITS ADNEXA. | | | | | | | PUERPERAL STATE. | | | |
|-------------------|------------------------------------------------|----------------------------------------|----------------------------------------|---------------------|----------------------------------|----------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|----------------------|-----------------------|-----------------------------------------------------|---------------------------------------|------------------------------|-------------------------------|----------------------------------|-----------------------------|---------------------------|
| | Diarrhoea and enteritis (over five years)..... | Hernia and intestinal obstructions.... | Other affections of the intestines.... | Icterus gravis..... | Peritonitis (not puerperal)..... | Other affections of digestive apparatus (except cancer and tubercle) | Ulcer of the stomach..... | Other affections of the stomach (cancer excepted)..... | Acute nephritis..... | Bright's disease..... | Other diseases of the kidneys and their adnexa..... | Cysts and other tumors of the ovary.. | Diseases of the bladder..... | Diseases of the prostate..... | Uterine tumor (not cancer) | Accidents of pregnancy..... | Puerperal hemorrhage..... |
| Kingman..... | 1 | | | | 1 | | | 1 | | 1 | | | | | | | 1 |
| Kiowa..... | | | | | 1 | | | | | | | | | | | | |
| Labette..... | | | | | 3 | | | | 3 | 4 | | | | | | | |
| Lane..... | | 1 | 1 | | | | | | | | | | | | | | |
| Leavenworth..... | | | | | | | | | | | | | | 1 | | | |
| Lincoln..... | | 4 | | 1 | 2 | | | | | | | | | | | 1 | |
| Linn..... | | | | | | | | | | | | | | | | | |
| Logan..... | | | | | | 3 | 1 | 3 | 6 | 3 | | | | | 1 | | |
| Lyon..... | 2 | 2 | | | | | | 2 | | | | | | | | | |
| Marion..... | | 1 | | | 4 | | 1 | 2 | 2 | 5 | | | | | | | |
| Marshall..... | | | 15 | | | | | | | | | | | | | 1 | |
| McPherson..... | | 1 | 2 | | | | | | 1 | 2 | 1 | | | | | | |
| Mead..... | 2 | 1 | | | | | | | | | | | | | | | |
| Miami..... | | 1 | | | 1 | | 1 | 7 | 4 | 3 | | | | | | 1 | |
| Mitchell..... | | 1 | 2 | | 2 | 1 | | 1 | 4 | 6 | | | | | | | |
| Montgomery..... | 1 | | 1 | | | | | 2 | 3 | | | | | | | | |
| Morris..... | | | | | 2 | | 2 | 1 | 2 | 3 | | | | | | | |
| Morton..... | | | | | | | | | 1 | 4 | | | | | | | |
| Nemaha..... | | | | | 5 | | 1 | 3 | | 3 | | | 1 | | | 4 | |
| Neosho..... | | 5 | | | | | 1 | | 3 | 6 | | | 4 | | | | 1 |
| Ness..... | | | | | | | | 1 | | | | | | | | | |
| Norton..... | | | | | | | | | 3 | | | | | | | | |
| Osage..... | | 4 | 1 | | 2 | | 1 | 2 | 1 | 3 | 6 | | | 1 | | | |
| Osborne..... | | | | | 2 | | | | 3 | | | 2 | 1 | | | | |
| Ottawa..... | | | | | | | | | | 6 | | | | | | 1 | 1 |
| Pawnee..... | | 1 | | | | | | | | 1 | | | | | 1 | | |
| Phillips..... | | | | | 2 | | | 1 | | | 1 | | | | | | |
| Pottawatomie..... | | | | | 1 | | | | 2 | 3 | | | | | | | |
| Pratt..... | | 1 | | 1 | | | | 3 | | | | | | | | 1 | |
| Rawlins..... | | | | | | | | | | 2 | | | | | | | |
| Reno..... | 2 | | | | | | | | | 5 | | | | | | | |
| Republic..... | | 1 | | | | 1 | 2 | 2 | | 4 | | | | | | | |
| Rice..... | | | | | | | | | | | 1 | | | | | | |
| Riley..... | | 1 | | | 2 | | | | 2 | | 1 | | | | | 2 | |
| Rooks..... | | | | | | | | | | | | | | | | | |
| Rush..... | | | | | | | | | | | | | | | | | |
| Russell..... | | | 2 | | | | 1 | | | 3 | | | | | | | 1 |
| Saline..... | | | | 2 | | | | 6 | 1 | 1 | | | | | | 1 | |
| Scott..... | | | | | | 1 | | | | | | | | | | | |
| Sedgwick..... | | 6 | 15 | 2 | 27 | | | 2 | | | 35 | | | | 1 | | 2 |
| Seward..... | | | | 1 | | | | | | 1 | | | | | | | |
| Shawnee..... | | | | | | | | | | 4 | | | | | | | |
| Sheridan..... | | | | | | | 1 | | | | 4 | | | | | | 1 |
| Sherman..... | | | | | | | | 1 | | | | | | | | | |
| Smith..... | 3 | | | | | | | | | 2 | | | | | | | |
| Stafford..... | | 1 | | | 1 | | | 4 | | 4 | | | | 2 | | | |
| Stanton..... | | | | | | | | | | | | | | 1 | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | DIGESTIVE APPARATUS. | | | | | | | GENITO-URINARY APPARATUS AND ITS ADNEXA. | | | | | | | PUERPERAL STATE. | | |
|--------------|------------------------------------------|------------------------------------|-------------------------------------|----------------|-----------------------------|----------------------------------------------------------------------|-----------------------|----------------------------------------------------|------------------|-------------------|------------------------------------------------|--------------------------------------|--------------------------|--------------------------|----------------------------|------------------------|-----------------------|
| | Diarrhea and enteritis (over five years) | Hernia and intestinal obstructions | Other affections of the intestines. | Icterus gravis | Peritonitis (not puerperal) | Other affections of digestive apparatus (except cancer and tubercle) | Ulcer of the stomach. | Other affections of the stomach (cancer excepted). | Acute nephritis. | Bright's disease. | Other diseases of the kidneys and their adnexa | Cysts and other tumors of the ovary. | Diseases of the bladder. | Diseases of the prostate | Uterine tumor (not cancer) | Accidents of pregnancy | Puerperal hemorrhage. |
| Stevens. | | | | | 2 | | | | | 4 | | | | | | | |
| Sumner. | 1 | | | | | | | | 1 | | | | | | | | |
| Thomas. | | | | | 1 | | | 1 | | 2 | | | | | | | |
| Trego. | | | | | 2 | | | 1 | | 1 | 3 | | | | | | |
| Wabaunsee. | 2 | | | | | | | | | | | | | | | | |
| Wallace. | | | | | | | | | | | | | | | | | |
| Washington. | | 1 | 3 | | | | | 4 | | 3 | 3 | | | 1 | 1 | 2 | |
| Wichita. | | | | | 1 | | | | | | | | | | | | |
| Wilson. | 3 | 2 | | | 2 | 3 | | 2 | 1 | 8 | | | | | | | 1 |
| Woodson. | | | | | 1 | | | 4 | | 9 | 2 | | | | | | |
| Wyandotte. | 1 | | | | | | | | 1 | 5 | 1 | | | | | | 1 |
| Cities. | | | | | | | | | | | | | | | | | |
| Atchison. | | | 3 | | 5 | | | | 1 | 11 | | | 1 | | | | |
| Coffeyville. | 1 | | 2 | | 1 | | | | 1 | 1 | 1 | | 2 | 1 | | 1 | |
| Kansas City. | 9 | 2 | 9 | | 32 | | | 15 | 39 | 16 | | 1 | 6 | | | 2 | 1 |
| Leavenworth. | 1 | 2 | 2 | 1 | 4 | | | 6 | 3 | 21 | 4 | | 1 | | 1 | | |
| Parsons. | | | | | 4 | | | 6 | 1 | 8 | | | 1 | | | | 1 |
| Pittsburg. | | | | | | | | | | | | | | | | | |
| Topeka. | 9 | 1 | | | 15 | 15 | 1 | 10 | 6 | 29 | 5 | | | | | | |
| Wichita. | | | | | | | | | | | | | | | | | |
| Totals. | 86 | 65 | 73 | 12 | 179 | 46 | 21 | 150 | 92 | 340 | 96 | 11 | 37 | 18 | 10 | 33 | 13 |

TABLE No. 6—CONTINUED.

| COUNTIES. | PUERPERAL STATE. | | | SKIN AND CUTANEOUS TISSUE—GANGRENE. | MALFORMATIONS (congenital). | EARLY INFANCY. | | | OLD AGE—Senile debility. | PRODUCED BY EXTERNAL CAUSES. | | | | | | |
|------------|---------------------------|-----------------------|----------------------------------------|---------------------------------------------|-----------------------------|----------------|----|----|--------------------------|------------------------------|----------------------|--------------|---------------------|-------------------------|-----------------------------|------------|
| | Other accidents of labor. | Puerperal septicemia. | Puerperal albuminuria and convulsions. | Other accidents of pregnancy, sudden death. | | | | | | Acute poisoning. | Accidental drowning. | Fire (burn). | Hot liquid (scald). | Fractures of the skull. | Fractures of the vertebrae. | Imanition. |
| Allen | | 1 | | | 3 | 14 | | 5 | 10 | 3 | | | 1 | | | |
| Anderson | | | | | | | | | 6 | | | | | | | |
| Atchison | | | | | | | 2 | | | | | | | | | |
| Barber | | | | | | 2 | 9 | | 8 | | 1 | | | | | |
| Barton | | 1 | | | | | | | | | | | | | | |
| Bourbon | | 1 | | | 1 | | | 9 | 29 | 3 | 2 | | 1 | | | 21 |
| Brown | | | | | 1 | | | | 7 | | | | | | | |
| Butler | | | | | | | | | | | 2 | | | | | |
| Chase | | 2 | | 2 | | | | | 5 | | 5 | | | | | |
| Chautauqua | | | | | | | | | | | | | | | | |
| Cherokee | 2 | 1 | | | | 15 | | 3 | 11 | | 3 | 3 | | | | |
| Cheyenne | | | | | | | | | | | | | | | | |
| Clark | 1 | | | | | 2 | | | 1 | | | | | | | |
| Clay | | | | | | | | | 14 | | 3 | | | | | |
| Cloud | | | | | | 16 | | | 11 | | 1 | 1 | | | | |
| Coffey | | 2 | | | 1 | | 1 | | 9 | | 3 | 1 | | | | 1 |
| Comanche | | 1 | | | | | | | 1 | | | | | | | |
| Cowley | | | | | | 1 | | 11 | 21 | | | | | | | |
| Crawford | | 2 | | 1 | 2 | 23 | 20 | 1 | 19 | | 4 | 4 | 1 | | | |
| Decatur | | | | | | | | | | | | | | | | |
| Dickinson | | | | | | 4 | | 1 | 17 | | 2 | | | | 1 | |
| Doniphan | | | | | | 1 | | | 4 | | 1 | | 1 | | 1 | |
| Douglas | | 4 | 2 | 1 | 1 | 9 | 1 | 10 | 18 | 1 | 2 | 1 | | | 2 | |
| Edwards | | 2 | | | | | | 5 | 5 | | | | | | | |
| Elk | | | | | | | | | 3 | | | | | | | |
| Ellis | | 2 | | | | | | | 8 | | 2 | | | | | |
| Ellsworth | | | | | | 3 | 1 | 3 | 4 | | | | 1 | | | |
| Finney | | | | | | | | | 3 | | 1 | | | | | 2 |
| Ford | | 1 | | | | 2 | 2 | | 12 | | | | | | | 4 |
| Franklin | | | | | | 3 | | 13 | 9 | 1 | 1 | 1 | | | | |
| Geary | | | | | 1 | | | | 12 | | 4 | 1 | | | 1 | |
| Gove | | 1 | | | | 2 | | | | | | | | | | |
| Graham | 1 | | | | | | | | | | | 3 | | | | |
| Grant | | | | | | | | | | | | | 2 | | | |
| Gray | | | | | | 3 | 3 | 7 | 4 | | | | | | | |
| Greeley | | | | | | | | | | | | | | | | |
| Greenwood | | | | | 1 | 4 | | 1 | 3 | | 1 | | 1 | | | |
| Hamilton | | | | | | | | | | | | | | | | |
| Harper | | 3 | | | | 6 | 1 | 1 | 5 | | | | | | | |
| Harvey | | 2 | | | 1 | | | | 12 | 1 | | | | | | |
| Haskell | | | | | | | | | | | | | | 1 | | |
| Hodgeman | | | | | 1 | 2 | | | | | | | | | | |
| Jackson | | 1 | | | | | 3 | | 5 | 1 | 2 | | | | | 2 |
| Jefferson | | | | | | | | | 5 | | 1 | | | | | |
| Jewell | | 1 | | | | | | | 5 | | 1 | | | | | |
| Johnson | | | | | | 1 | 1 | | 4 | | | | | | | 2 |
| Kearny | 1 | | | | | 1 | | | | | | 1 | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | PUERPERAL STATE. | | | SKIN AND CELLULAR TISSUE—Gangrene..... | MALFORMATIONS (congenital)..... | EARLY INFANCY. | | OLD AGE—Senile debility..... | PRODUCED BY EXTERNAL CAUSES. | | | | | | |
|-------------------|-------------------------------|----------------------------------------|----------------------|----------------------------------------|---------------------------------|--------------------------------------|--------------------------------|------------------------------|------------------------------|--------------------------|------------------|-------------------------|-----------------------------|---------------------------------|----------------|
| | Other accidents of labor..... | Puerperal albuminuria and convulsions. | Puerperal death..... | | | Lack of care, malnutrition, etc..... | Other diseases of infancy..... | | Acute poisoning..... | Accidental drowning..... | Fire (burn)..... | Hot liquid (scald)..... | Fractures of the skull..... | Fractures of the vertebrae..... | Inanition..... |
| Kingman..... | | | | | | 1 | 1 | 2 | | | | | | | |
| Kiowa..... | | 1 | | 1 | | | 2 | 1 | | | | | | | |
| Labette..... | | | | | | | 1 | 1 | | | | | 2 | | |
| Lane..... | 1 | | | | | 5 | | 9 | 1 | 1 | 1 | | | 1 | 3 |
| Leavenworth..... | | | | | | | | | | | | | | | |
| Lincoln..... | | | | 1 | | | 5 | 5 | | | | | | | |
| Linn..... | | | | | | | | | | | | | | | |
| Logan..... | | | | | | | | | | | | 1 | | | |
| Lyon..... | | 2 | 2 | 1 | | 4 | 1 | 18 | | 6 | 4 | | | | 1 |
| Marion..... | | 2 | | | 1 | 1 | | 4 | | 1 | 1 | | | | |
| Marshall..... | | | | 2 | | 10 | | 18 | | 6 | | | | | 4 |
| McPherson..... | | 1 | | | | 5 | | 23 | 2 | | 1 | 1 | | | |
| Meade..... | | | | | | | | 4 | | | | | | | 2 |
| Miami..... | | | | 1 | | | | 7 | | 1 | 1 | | 1 | 1 | |
| Mitchell..... | 1 | 1 | | | | 3 | | 9 | 1 | 1 | 3 | | | | |
| Montgomery..... | | 1 | | | | 1 | | 6 | | 1 | | | 1 | | |
| Morris..... | | 1 | | | | 5 | | 6 | | | | | | | |
| Morton..... | | | | | | 2 | | | | | | | | | |
| Nemaha..... | | 1 | 11 | | | | | 19 | | 1 | 1 | 1 | 1 | 2 | 1 |
| Neosho..... | 12 | 1 | | | | | | 9 | | | | 3 | | | |
| Ness..... | | | | | | | | | | | | | | | |
| Norton..... | | | | | | 1 | | 23 | | 1 | 2 | | | | |
| Osage..... | | 1 | | | | 5 | | 6 | | 1 | 1 | | | | |
| Osborne..... | | | | | | | 8 | 10 | | | 2 | 2 | | | |
| Ottawa..... | | 1 | | | | | | 3 | | | | | | | |
| Pawnee..... | | | | | | | | 6 | | | 1 | | | | 1 |
| Phillips..... | | 1 | | | | 6 | | 3 | | | | | | | |
| Pottawatomie..... | | | | | | | 2 | 2 | | | | | | | |
| Pratt..... | | | | | | | | | | 1 | | | | | |
| Rawlins..... | | 1 | | | | | | 6 | | | | | | | |
| Reno..... | | 2 | | | | | | 6 | | 2 | | | | | |
| Republic..... | | | | | | 6 | | 6 | | | | | | | 3 |
| Rice..... | | | | | | | | | | | | | | | |
| Riley..... | | | | 1 | 1 | 2 | 1 | 9 | 1 | 1 | 1 | | 1 | | |
| Rooks..... | | | | | | | | | | | | | | | |
| Rush..... | | | 1 | | | 4 | 3 | 1 | 2 | | 1 | | | | |
| Russell..... | | | | | | | | 3 | | 1 | | | | | |
| Saline..... | | 5 | | | | | | 19 | | 1 | 1 | | | 2 | |
| Scott..... | | | | | | | | | | 1 | | | | | |
| Sedgwick..... | | 1 | | 4 | | | | 35 | 4 | 7 | 1 | | 1 | | 20 |
| Seward..... | | | | | | 3 | | | | | | | | | |
| Shawnee..... | | | | | | | | 1 | | | | | | | |
| Sheridan..... | | 1 | | | | | 2 | 1 | 2 | | | | | | |
| Sherman..... | | | | | | | | 1 | | | | | | | |
| Smith..... | | 1 | | 1 | | | | 2 | | | | | | | |
| Stafford..... | | | | 1 | | | | 2 | | | 1 | | | | |
| Stanton..... | | | | | | | | 10 | | | | | | | |

TABLE No. 6—CONTINUED.

| COUNTIES. | PUERPERAL STATE. | | | SEIN AND CELLULAR Tissues—Gangrene..... | MALFORMATIONS (congenital)..... | EARLY INFANCY. | | Old Age—Senile debility..... | PRODUCED BY EXTERNAL CAUSES. | | | | | | | |
|------------------|-------------------------------|---------------------------|----------------------------------------|-------------------------------------------------|---------------------------------|--------------------------------------------------------------------|--------------------------------------|------------------------------|--------------------------------|----------------------|--------------------------|------------------|-------------------------|-----------------------------|---------------------------------|----------------|
| | Other accidents of labor..... | Puerperal septicemia..... | Puerperal albuminuria and convulsions. | Other accidents of pregnancy, sudden death..... | | Congenital debility, jaundice and scelerema (premature birth)..... | Lack of care, malnutrition, etc..... | | Other diseases of infancy..... | Acute poisoning..... | Accidental drowning..... | Fire (burn)..... | Hot liquid (scald)..... | Fractures of the skull..... | Fractures of the vertebrae..... | Inanition..... |
| Stevens..... | | | | | | 2 | | 1 | | | | 7 | | | | |
| Sumner..... | 1 | | | | | | | 1 | | | | | | | | |
| Thomas..... | | | | | | 2 | | 2 | | | | | | 1 | | |
| Trego..... | | 1 | | | | 1 | 1 | 3 | 4 | | | 2 | 1 | | | 1 |
| Wabaunsee..... | | | | | | | | | | | | | | | | |
| Wallace..... | | | | | | | | | | | | | | | | |
| Washington..... | | | 1 | 1 | 1 | | 1 | 5 | | | 2 | | | | | |
| Wichita..... | | | | | | | | | | | 1 | | | | | |
| Wilson..... | 1 | 2 | | | | 9 | | 1 | 13 | | 2 | | | | | 5 |
| Woodson..... | | 1 | | 1 | | | 1 | 2 | 8 | | | | | | | |
| Wyandotte..... | | 5 | | | 2 | 2 | 7 | 6 | 17 | | 1 | | | | 1 | |
| Cities..... | | | | | | | | | | | | | | | | |
| Atchison..... | | | | | | | 19 | | 19 | | 2 | | | 2 | | 1 |
| Coffeyville..... | | 1 | 1 | | 1 | 2 | 1 | | | | | | | | | 32 |
| Kansas City..... | 3 | 1 | | | 2 | 4 | 25 | 4 | 87 | | 2 | 1 | | 1 | | |
| Leavenworth..... | | | | | | 8 | 1 | 8 | 22 | | 1 | 3 | 1 | 3 | 1 | 7 |
| Parsons..... | | | 1 | | | 14 | | | 22 | | | | | 1 | | |
| Pittsburg..... | | | | | | | | | | | | | | | | |
| Topeka..... | 1 | 1 | | | 1 | | | | | | | | | | | |
| Wichita..... | | | | | | | 9 | 8 | 36 | 1 | 3 | 6 | | 4 | 2 | |
| Total..... | 33 | 62 | 12 | 13 | 25 | 20 | 141 | 113 | 226 | 811 | 21 | 91 | 62 | 16 | 25 | 113 |

TABLE No. 6—CONTINUED.

| COUNTIES. | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | | | ILL-DEFINED. | | | TOTAL NUMBER OF DEATHS. | | |
|------------|------------------------------|-------|---------|------------------|---------------------------------|---------------------|----------|-----------------|-------------------|---------------------|-------------------------------------|---------------------|--------------------------|--------|-------------------------|------------------------------|-------------|
| | Dyspnoea (child) | Falls | Gunshot | Mining accidents | Railroad accidents and injuries | Vehicles and horses | Homicide | Other accidents | Suicide by poison | Suicide by asphyxia | Suicide by hanging or strangulation | Suicide by firearms | Suicide by other methods | Dropsy | | Sudden death (not puerperal) | Unspecified |
| Allen | 3 | | 1 | 1 | | 1 | 1 | 1 | | 2 | | | 4 | 6 | | 4 | 216 |
| Anderson | | | 1 | | | 1 | | | | | | | | | 4 | 23 | 104 |
| Atchison | | | | | 1 | | | 2 | | | | | | | 2 | 1 | 46 |
| Barber | | | | | | 2 | | | | | | 1 | | | | | 13 |
| Barton | | | 1 | | 1 | | | | | 2 | | | | | | 2 | 126 |
| Bourbon | | | 8 | | | | | 6 | | | | 1 | | 14 | | 64 | 315 |
| Brown | | | | | | | 1 | 3 | | | | | | 4 | | 33 | 114 |
| Butler | | | | | 2 | 1 | | | 1 | | | | | 6 | | 73 | 155 |
| Chase | | | | | | | | | | | 1 | 1 | | 1 | | | 80 |
| Chautauqua | | | | | | | | | | | | | | | | | |
| Cherokee | 4 | | 2 | 8 | 1 | | 4 | | | | | | 1 | 5 | | 63 | 365 |
| Cheyenne | | | | | | | | | | | | | | | | 17 | 32 |
| Clark | | | | | | | | | | | | | | | 1 | 1 | 13 |
| Clay | 4 | | | | 1 | | | | | | | | 1 | 7 | | 34 | 140 |
| Cloud | | | 2 | | 2 | 1 | | | | | | | | | | 12 | 131 |
| Coffey | 1 | | 1 | | | | | | | | | 1 | | 1 | | 19 | 130 |
| Comanche | | | | | | | | | 1 | | | | | | | 8 | 15 |
| Cowley | | | | | | | | 20 | 1 | | | | | 10 | | 53 | 231 |
| Crawford | | | 2 | 17 | | | | | 1 | | | 2 | 3 | 10 | 1 | 65 | 453 |
| Decatur | | | | | | | | | | | | | | | | 2 | 9 |
| Dickinson | | | 1 | | 2 | 2 | | | | 2 | | | | 2 | 5 | 14 | 156 |
| Doniphan | | | | | | 1 | | | | 1 | | | | | | | 55 |
| Douglas | 1 | 2 | | | | 1 | 4 | | | | | | | | | | 388 |
| Edwards | | | | | 2 | | | | | | | | | | 3 | | 39 |
| Elk | | | | | 1 | | | | | | | | | | | 1 | 68 |
| Ellis | | 1 | | | 1 | | | | | | | | | | | 6 | 89 |
| Ellsworth | | | 2 | 2 | | 1 | | | | | | 2 | | 2 | | 5 | 91 |
| Finney | 1 | | | | 1 | | | 1 | | | | | | 1 | | 9 | 76 |
| Ford | | | 2 | | 1 | | | | | | | 1 | | | | 11 | 121 |
| Franklin | | | 1 | | | | | 1 | | | | | | | | 26 | 131 |
| Geary | | 1 | 1 | | | | | | 1 | | 1 | 2 | 1 | 5 | | 6 | 105 |
| Gove | | | | | | | | | | | | | | | | 1 | 31 |
| Graham | | | 2 | | | 1 | | | 1 | | | | | 1 | 2 | 2 | 23 |
| Grant | | | | | | | | | | | | | | | | 3 | 7 |
| Gray | | | | | | | | 1 | | | | | | | | | 31 |
| Greeley | | | | | | | | | | | | | | | | | |
| Greenwood | | | 2 | | | | | | | | | | | | | 4 | 86 |
| Hamilton | | | | | | | | | | 1 | | | | | | 6 | 25 |
| Harper | | | 1 | | 1 | | | | | | | | | 6 | | 13 | 113 |
| Harvey | | | 4 | | 3 | | | | | | 1 | | | | | 4 | 102 |
| Haskell | | | | | | | | | | | | | | | | 1 | 7 |
| Hodgeman | | | | | | | | | | | | | | | | 1 | 16 |
| Jackson | 1 | | | | | | | 2 | | | | | | | | 20 | 120 |
| Jefferson | | | 1 | | 3 | | | | | | 1 | | | 2 | | 5 | 112 |
| Jewell | | 12 | | | | | | | | | | | | 2 | | 11 | 113 |
| Johnson | | | 1 | | | | | | | | | | | | | 1 | 24 |
| Kearny | | | | | | | | | | | 1 | | | | | 2 | 13 |

TABLE No. 6—CONTINUED.

| COUNTIES. | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | | | ILL-DEFINED. | | | | TOTAL NUMBERS OF DEATHS..... | |
|-------------------|------------------------------|------------|--------------|-----------------------|--------------------------------------|--------------------------|---------------|----------------------|------------------------|--------------------------|------------------------------------------|--------------------------|-------------------------------|-------------|-----------------------------------|------------------------------|------------------|
| | Dyspnoea (child)..... | Falls..... | Gunshot..... | Mining accidents..... | Railroad accidents and injuries..... | Vehicles and horses..... | Homicide..... | Other accidents..... | Suicide by poison..... | Suicide by asphyxia..... | Suicide by hanging or strangulation..... | Suicide by firearms..... | Suicide by other methods..... | Dropsy..... | Sudden death (not puerperal)..... | | Unspecified..... |
| Kingman..... | | | | | | 1 | 1 | | | | | | | 1 | | 6 | 38 |
| Kiowa..... | | | 1 | | | | | | | | | | | | | 3 | 14 |
| Labette..... | | | | | | | | | 1 | | | | | 1 | 1 | 6 | 77 |
| Lane..... | | | | | | | | | | | | | | | | 1 | 14 |
| Leavenworth..... | | | 3 | 1 | 1 | 2 | | | | | | | | 1 | 1 | 3 | 150 |
| Lincoln..... | | | | | | | | | | | | | | | | 25 | 84 |
| Linn..... | | | | | | | | | | | | | | | | | |
| Logan..... | | | | | 2 | | | | | | | | | | | | 10 |
| Lyon..... | | | 1 | | 2 | 2 | | | | | | 2 | | 3 | | 13 | 241 |
| Marion..... | | | | | | | | 2 | 1 | | | | | | | 7 | 98 |
| Marshall..... | | | 3 | | | | | 5 | | | | | | 4 | | 21 | 200 |
| McPherson..... | | 1 | 1 | | 1 | | | | | | | | | 7 | | 18 | 134 |
| Meade..... | | | | | | | | | | | | | | | | 3 | 39 |
| Miami..... | | | | | | | | 2 | | | | | | | | 2 | 59 |
| Mitchell..... | | 1 | 1 | | | 1 | | | | | | | | 2 | | 19 | 114 |
| Montgomery..... | | | 5 | | 1 | | | | | | | 1 | | 1 | 1 | 36 | 139 |
| Morris..... | | | 3 | | 3 | | | | | | | 3 | | 5 | 4 | 27 | 106 |
| Morton..... | | | | | | | | | | | | 1 | | | | | 11 |
| Nemaha..... | | | 2 | | | | | 1 | | | | | | 11 | | 17 | 201 |
| Neosho..... | | | 2 | | 2 | | | | | | | | | | | 4 | 165 |
| Ness..... | | | | | | | | | | | | | | 1 | | 10 | 29 |
| Norton..... | | | | | | | | | | | | | | | | 1 | 56 |
| Osage..... | | | 1 | 1 | 1 | | | 1 | 1 | | | 5 | | 3 | 8 | 15 | 208 |
| Osborne..... | | | 2 | | | 2 | | 1 | | | | | | 3 | | 6 | 84 |
| Ottawa..... | | 1 | | | | | | | | | | | | | 1 | 3 | 40 |
| Pawnee..... | | | | | | | 1 | | | | | | | 2 | | | 40 |
| Phillips..... | | | 2 | | 1 | 1 | | | | | | 1 | | 1 | | 2 | 72 |
| Pottawatomie..... | | | | | | | | | | | | | | | | | 73 |
| Pratt..... | | | | | | | | 3 | | | | | | 1 | | 40 | 74 |
| Rawlins..... | | | | | | | | | 1 | | | | | 2 | | 10 | 52 |
| Reno..... | | | 2 | | | | | 2 | 2 | | | | | 8 | 4 | 13 | 152 |
| Republic..... | | | | | 1 | 1 | 1 | | | | 1 | 1 | | | | 13 | 101 |
| Rice..... | | | 1 | | | | | | | | | | | | | 6 | 17 |
| Riley..... | | | 1 | | 2 | 1 | | 1 | 1 | | 1 | 1 | | 2 | | 5 | 156 |
| Rooks..... | | | | | | | | | | | | | | | | | |
| Rush..... | | | 2 | | 1 | 1 | | | | | | | | | 1 | 1 | 60 |
| Russell..... | 1 | 2 | | | | | | | | | | | | | 1 | 2 | 50 |
| Saline..... | 1 | 3 | 2 | | | 1 | | | | | | | | 5 | | 40 | 179 |
| Scott..... | | | | | | | | | | | | | | | | 1 | 9 |
| Sedgwick..... | | | 6 | | 4 | | | 4 | | | | | 6 | | 5 | 120 | 654 |
| Seward..... | | | | | | | | | | | | | | 1 | | | 17 |
| Shawnee..... | | | | | | | | | | | | | | 3 | | 5 | 30 |
| Sheridan..... | | | 1 | | | | | | | | | | | | | | 21 |
| Sherman..... | | | | | | 1 | | | | | | | | | | 2 | 34 |
| Smith..... | | | | | | | | | | | | 1 | | | | | 73 |
| Stafford..... | | | 2 | | | | | | | | | | 1 | | | | |
| Stanton..... | | | | | | | | | | | | | | 3 | | 25 | 117 |

TABLE No. 6—CONCLUDED.

| COUNTIES. | PRODUCED BY EXTERNAL CAUSES. | | | | | | | | | | | | ILL-DEFINED. | | | TOTAL NUMBER OF DEATHS. | |
|--------------|------------------------------|--------|----------|-------------------|----------------------------------|----------------------|-----------|------------------|--------------------|----------------------|--------------------------------------|----------------------|---------------------------|---------|-------------------------------|-------------------------|--------------|
| | Dysentecia (child) | Falls. | Gunshot. | Mining accidents. | Railroad accidents and injuries. | Vehicles and horses. | Homicide. | Other accidents. | Suicide by poison. | Suicide by asphyxia. | Suicide by hanging or strangulation. | Suicide by firearms. | Suicide by other methods. | Dropsy. | Sudden death (not puerperal). | | Unspecified. |
| Stevens. | | | | | | | | | | | | | | | | | 114 |
| Sumner. | | | | | | | | | | | | | | | | 10 | 34 |
| Thomas. | | | | | | | | | | 1 | | 1 | | | | | 24 |
| Trego. | | | | | | | | | | 1 | | 1 | | | | | 94 |
| Wabaunsee. | | | 1 | | 1 | | | | 1 | | | | | 5 | | 5 | |
| Wallace. | | | | | | | | | | | | | | | | | |
| Washington. | | | | | | 1 | | | | | | | | 6 | 7 | 30 | 169 |
| Wichita. | | | 1 | | | | | | | | | 1 | | | | | 6 |
| Wilson. | | | | 1 | | 1 | 1 | 4 | | | | 1 | | | | 15 | 181 |
| Woodson. | | 1 | 1 | | 2 | | | | | | | | | 2 | | 13 | 96 |
| Wyandotte. | | | 2 | | 1 | | | | | 1 | | | | 2 | 1 | 18 | 129 |
| Cities. | | | | | | | | | | | | | | | | | |
| Atchison. | | | | | 5 | 1 | | 6 | 8 | | | 1 | | 4 | 4 | 47 | 247 |
| Coffeyville. | | | | | | | | | 1 | | | 1 | | | | | 67 |
| Kansas City. | | | 4 | | | | 8 | 32 | | 4 | 3 | | 8 | | | 12 | 1,112 |
| Leavenworth. | | | 2 | | 4 | | | 2 | 2 | | | 2 | | 3 | | 6 | 319 |
| Parsons. | | | | 6 | 11 | | | 1 | 2 | | | | | 2 | 1 | 2 | 222 |
| Pittsburg. | | | | | | | | | | | | | | | | | |
| Topeka. | | | | | | | | | | | | | | | | | |
| Wichita. | 3 | | 6 | | 12 | | | 8 | 4 | | 1 | 1 | 2 | 9 | | 38 | 629 |
| Totals. | 18 | 25 | 100 | 32 | 85 | 29 | 22 | 112 | 80 | 10 | 12 | 35 | 29 | 206 | 55 | 1,364 | 12,712 |

The preceding table contains only a list of those causes producing ten or more deaths. Other causes, with the number of deaths attributed to each, are as follows:

| GENERAL DISEASES. | RESPIRATORY SYSTEM. | SKIN AND CELLULAR TISSUE. |
|-----------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------|
| Actinomycosis, trichinosis, etc..... 3 | Diseases of the nasal fossae... 3 | Furuncle (carbuncle)..... 1 |
| Addison's disease..... 4 | Pulmonary emphysema..... 4 | Phlegmon, warm abscess... 1 |
| Cancer and other mal. tumors of the skin..... 2 | DIGESTIVE APPARATUS. | Other diseases of the skin and its adnexa (cancer excepted)..... 3 |
| Exophthalmic goiter..... 6 | Affections of the mouth and its adnexa..... 2 | ORGANS OF LOCOMOTION. |
| Lead poisoning or other professional intoxications..... 4 | Affections of the pharynx... 2 | Affections of the bones..... 4 |
| Leukemia..... 8 | Affections of the esophagus... 3 | Anthraxis and other diseases of the joints (tubercle and rheumatism excepted)..... 1 |
| Miliary fever..... 4 | Affections of the spleen..... 5 | Amputation (for unspecified disease)..... 5 |
| Mumps..... 1 | Hydated tumor of the liver... 2 | Other affections of the organs of locomotion..... 1 |
| Rubeola, etc..... 1 | Intestinal parasites..... 3 | PRODUCED BY EXTERNAL CAUSES. |
| Rabies..... 1 | GENITO-URINARY APPARATUS AND ITS ADNEXA. | Absorption of deleterious gases (suicide excepted).... 5 |
| Recurrent fever..... 5 | Calculi of the urinary tract... 1 | Burning by corrosive substances..... 2 |
| Scrofula..... 2 | Diseases of the female genital organs..... 5 | Dislocations..... 4 |
| Smallpox..... 3 | Diseases of the urethra (urinary abscess, etc.)..... 6 | Electrical disturbances..... 9 |
| NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. | Metritis..... 2 | Fractures of the femur..... 4 |
| Chorea..... 2 | Non-general diseases of the male genital organs..... 2 | Other fractures..... 6 |
| Diseases of the ear and its adnexa..... 2 | Uterine hemorrhage (not puerperal)..... 2 | Electric shock..... 8 |
| Encephalitis..... 4 | Other diseases of the uterus... 9 | Suicide by drowning..... 8 |
| CIRCULATORY APPARATUS. | PUERPERAL STATE. | Suicide by cutting-instruments..... 5 |
| Affections of the lymphatic system, lymphangitis, etc.. 4 | Phlegmasia alba dolens..... 3 | Suicide by crushing..... 1 |
| | | Sunstroke (insolation)..... 5 |

TABLE No. 7.—OCCUPATIONS OF THE DECEASED, 1907.

| | | | |
|-------------------------------|-------|-----------------------------------------------------|--------|
| Attorneys..... | 24 | Ministers..... | 39 |
| Bakers..... | 14 | Molders..... | 5 |
| Blacksmiths..... | 31 | Nurses..... | 8 |
| Bookbinders..... | 1 | Oil- and gas-well workers..... | 4 |
| Bookkeepers and clerks..... | 70 | Painters..... | 42 |
| Bricklayers..... | 15 | Paper-hangers..... | 6 |
| Butchers..... | 28 | Planing-mill workers..... | 1 |
| Carpenters..... | 110 | Physicians..... | 35 |
| Cigar-makers..... | 3 | Policemen..... | 4 |
| Drivers..... | 30 | Printers and pressmen..... | 8 |
| Druggists..... | 15 | Real-estate agents..... | 15 |
| Editor and writers..... | 7 | Seamstresses..... | 14 |
| Electrical workers..... | 11 | Steam-railway employees (office)..... | 16 |
| Engineers..... | 41 | Steam-railway employees (operating department)..... | 80 |
| Engravers and artists..... | 4 | Stockmen..... | 30 |
| Farmers..... | 1,826 | Street-railway employees..... | 4 |
| Firemen..... | 15 | Shoemakers..... | 20 |
| Housewives..... | 2,897 | Stenographers..... | 10 |
| Insurance agents..... | 10 | Stone- and marble-cutters..... | 17 |
| Jewelers and watchmakers..... | 9 | Servants..... | 151 |
| Laborers..... | 826 | Tailors..... | 15 |
| Laundry employees..... | 8 | Tinners..... | 8 |
| Linemen..... | 6 | Teachers..... | 40 |
| Liquor dealers..... | 13 | Not specified..... | 6,679 |
| Machinists..... | 35 | | |
| Merchants..... | 134 | | |
| Miners..... | 113 | Total..... | 13,063 |

TABLE No. 8.—OCCUPATIONS OF THE DECEASED, 1908.

| | | | |
|-------------------------------|-------|-----------------------------------------------------|--------|
| Attorneys..... | 34 | Miners..... | 108 |
| Bakers..... | 16 | Ministers..... | 84 |
| Bankers..... | 10 | Molders..... | 9 |
| Blacksmiths..... | 25 | Musicians..... | 6 |
| Barbers..... | 19 | Nurses..... | 9 |
| Bookkeepers..... | 34 | Oil- and gas-well workers..... | 4 |
| Bricklayers..... | 17 | Painters..... | 44 |
| Butchers..... | 22 | Paper-hangers..... | 11 |
| Contractors..... | 30 | Planing-mill workers..... | 7 |
| Carpenters..... | 111 | Physicians..... | 41 |
| Cooks..... | 35 | Policemen..... | 7 |
| Cigar-makers..... | 11 | Printers and pressmen..... | 16 |
| Clerks..... | 89 | Real-estate agents..... | 26 |
| Dentists..... | 2 | Salesmen..... | 38 |
| Drivers..... | 37 | Steam-railway employees (office)..... | 17 |
| Dressmakers..... | 21 | Steam-railway employees (operating department)..... | 87 |
| Druggists..... | 13 | Stockmen..... | 38 |
| Editors and writers..... | 4 | Street-railway employees..... | 9 |
| Electrical workers..... | 16 | Shoemakers..... | 11 |
| Engineers..... | 51 | Stenographers..... | 7 |
| Engravers and artists..... | 6 | Stone- and marble-cutters..... | 23 |
| Farmers..... | 1,709 | Students..... | 221 |
| Firemen..... | 21 | Servants..... | 64 |
| Housewives..... | 2,373 | Tailors..... | 8 |
| Insurance agents..... | 11 | Tinners..... | 4 |
| Jewelers and watchmakers..... | 9 | Teachers..... | 39 |
| Laborers..... | 664 | Undertakers..... | 5 |
| Laundry employees..... | 18 | Not specified..... | 6,180 |
| Linemen..... | 6 | | |
| Machinists..... | 45 | | |
| Merchants..... | 130 | Total..... | 12,712 |

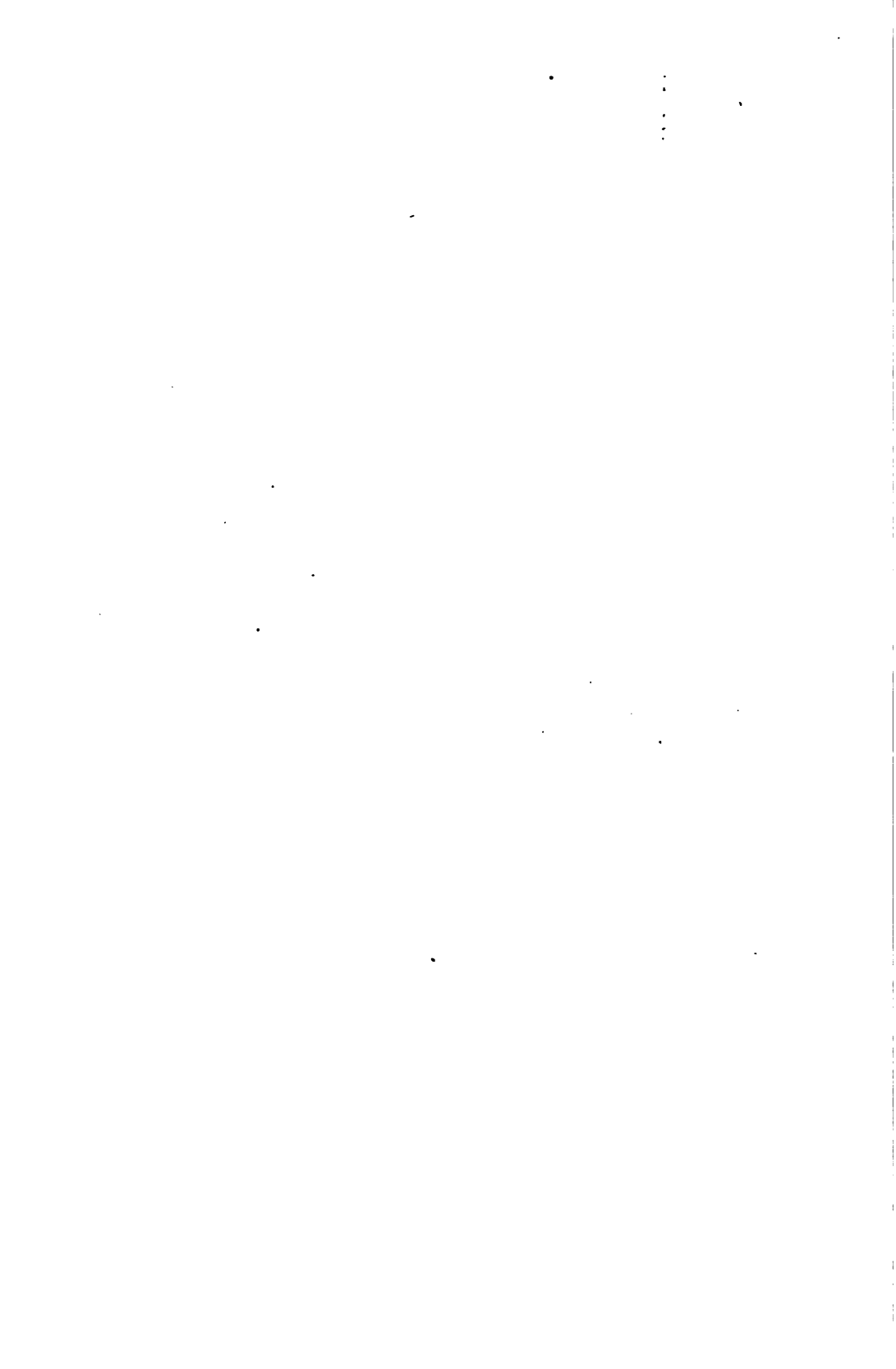
TABLE No. 9.—AGES OF THE DECEASED, 1907.

| | | | |
|------------------------------|-------|--------------------------------|--------|
| Under 1 year..... | 1,889 | Between 60 and 70 years..... | 1,439 |
| Between 1 and 2 years..... | 508 | Between 70 and 80 years..... | 1,499 |
| Between 2 and 5 years..... | 498 | Between 80 and 90 years..... | 795 |
| Between 5 and 10 years..... | 336 | Between 90 and 100 years..... | 128 |
| Between 10 and 15 years..... | 283 | Between 100 and 110 years..... | 5 |
| Between 15 and 20 years..... | 392 | Above 110 years..... | 1 |
| Between 20 and 30 years..... | 1,035 | Unknown ages..... | 1,353 |
| Between 30 and 40 years..... | 971 | | |
| Between 40 and 50 years..... | 911 | Total..... | 13,082 |
| Between 50 and 60 years..... | 1,039 | | |

TABLE No. 10.—AGES OF THE DECEASED, 1908.

| | | | |
|------------------------------|-------|--------------------------------|--------|
| Under 1 year..... | 1,755 | Between 60 and 70 years..... | 1,466 |
| Between 1 and 2 years..... | 486 | Between 70 and 80 years..... | 1,423 |
| Between 2 and 5 years..... | 543 | Between 80 and 90 years..... | 769 |
| Between 5 and 10 years..... | 354 | Between 90 and 100 years..... | 96 |
| Between 10 and 15 years..... | 275 | Between 100 and 110 years..... | 14 |
| Between 15 and 20 years..... | 393 | Above 110 years..... | 2 |
| Between 20 and 30 years..... | 1,001 | Unknown ages..... | 1,372 |
| Between 30 and 40 years..... | 935 | | |
| Between 40 and 50 years..... | 805 | Total..... | 12,734 |
| Between 50 and 60 years..... | 1,043 | | |

BULLETINS.



BULLETIN

OF THE

Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.
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No. 1.

JANUARY, 1907.

VOL. 3.

A New Year's resolve—I'll do it better.

No success was ever reared without the foundation of good resolutions.—*Rev. S. S. Estey, Ph. D.*

Little Jack Horner sat in a corner
Eating a modern pie,
In acids mopped, with borates topped,
And colored up with dye.

—*Topeka Capital.*

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VITAL STATISTICS

Reported to the Kansas Board of Health for December, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever | | Smallpox. | | Measles. | |
|-------------------|--------------------|---------|-------------------|---------|------------------|---------|------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Allen | 0 | 0 | 4 | 0 | 9 | 1 | 7 | 1 | 3 | 0 | 3 | 0 |
| *Anderson | | | | | | | | | | | | |
| †Atchison | | | | | | | | | | | | |
| *Barber | | | | | | | | | | | | |
| Barton | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 | 0 |
| Bourbon | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Brown | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Butler | 4 | 4 | 4 | 2 | 5 | 0 | 0 | 0 | 2 | 0 | 7 | 0 |
| Chase | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Chautauqua | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cherokee | 2 | 2 | 0 | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| †Cheyenne | | | | | | | | | | | | |
| Clark | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Clay | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cloud | 0 | 0 | 0 | 0 | 15 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Coffey | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Comanche | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Cowley | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 2 | 4 | 0 | 0 | 0 |
| Crawford | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 1 |
| †Decatur | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Dickinson | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Douglas | 0 | 0 | 1 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Edwards | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Elk | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Ellis | | | | | | | | | | | | |
| *Ellsworth | | | | | | | | | | | | |
| Finney | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ford | | | | | | | | | | | | |
| Franklin | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geary | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 3 | 0 | 0 | 0 |
| †Gove | | | | | | | | | | | | |
| *Graham | | | | | | | | | | | | |
| *Grant | | | | | | | | | | | | |
| Gray | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Greener | | | | | | | | | | | | |
| Greenwood | 0 | 0 | 0 | 0 | 17 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Hamilton | | | | | | | | | | | | |
| Harper | 3 | 3 | 1 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 |
| Harvey | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Haskell | | | | | | | | | | | | |
| †Hodgeman | | | | | | | | | | | | |
| Jackson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Jefferson | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| Jewell | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Johnson | | | | | | | | | | | | |
| *Kearny | | | | | | | | | | | | |
| Kingman | 3 | 3 | 2 | 2 | 13 | 1 | 9 | 0 | 0 | 0 | 0 | 0 |
| Kiowa | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette | 2 | 2 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| †Lane | | | | | | | | | | | | |
| Leavenworth | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linn | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Logan | | | | | | | | | | | | |
| Lyon | 0 | 0 | 0 | 0 | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|-------------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Marion..... | 0 | 0 | 0 | 0 | 8 | 3 | 9 | 2 | 0 | 0 | 0 | 0 |
| Marshall..... | 2 | 2 | 3 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| †McPherson..... | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Meade..... | 40 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Miami..... | 2 | 2 | 0 | 0 | 2 | 0 | 3 | 1 | 0 | 0 | 0 | 0 |
| Mitchell..... | 3 | 2 | 8 | 2 | 4 | 4 | 2 | 0 | 12 | 1 | 0 | 0 |
| Montgomery..... | 3 | 3 | 2 | 0 | 13 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Morris..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Morton..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Neosho..... | | | | | | | | | | | | |
| †Neosho..... | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Osborne..... | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| Phillips..... | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie..... | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 2 | 0 | 1 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 |
| Rawlins..... | | | | | | | | | | | | |
| Republic..... | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rice..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Riley..... | 2 | 0 | 1 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| †Rooks..... | | | | | | | | | | | | |
| Rush..... | | | | | | | | | | | | |
| Russell..... | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| Saline..... | 1 | 1 | 0 | 0 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Scott..... | | | | | | | | | | | | |
| Seawick..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Seward..... | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Shawnee..... | | | | | | | | | | | | |
| †Sheridan..... | | | | | | | | | | | | |
| Sherman..... | 3 | 3 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smith..... | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | | | | | | | | | | | | |
| †Stanton..... | | | | | | | | | | | | |
| Stevens..... | | | | | | | | | | | | |
| Samner..... | 2 | 2 | 0 | 0 | 7 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | | | | | | | | | | | | |
| Trego..... | | | | | | | | | | | | |
| Wabaunsee..... | 0 | 0 | 0 | 0 | 13 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| †Wallace..... | | | | | | | | | | | | |
| Washington..... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| Wichita..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilson..... | 0 | 0 | 2 | 1 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Woodson..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>Offices:</i> | | | | | | | | | | | | |
| *Atchison..... | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coffeyville..... | | | | | | | | | | | | |
| *Fort Scott..... | | | | | | | | | | | | |
| Kansas City..... | 15 | 11 | 45 | 1 | 28 | 5 | 3 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth..... | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 2 | 0 |
| Parsons..... | | | | | | | | | | | | |
| Topeka..... | 0 | 0 | 0 | 0 | 21 | 1 | 6 | 0 | 2 | 0 | 0 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 4 | 0 |
| State Institutions..... | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Totals..... | 96 | 59 | 103 | 23 | 277 | 38 | 111 | 9 | 45 | 0 | 28 | 2 |
| For Dec., 1905..... | 116 | 58 | 114 | 22 | 304 | 40 | 208 | 4 | 145 | 0 | 27 | 3 |

* No report. † No contagious diseases in county. ‡ No health officer.

FOOD ANALYSES, No. VI.

The report of our food analyst, Professor Bailey, is herewith submitted. Special attention is called to the articles sold by mail-order houses. While little adulteration is found, there seems to be a tendency towards short weight, which is quite as fraudulent, if not as unwholesome, as that of adulterated goods themselves. Will the people never learn that good goods and honest weights cannot be sold for less money than their actual production. The moral of this is to patronize Kansas merchants.

With the assurance given us by the wholesale grocery houses and manufacturers of Kansas that they are now and will henceforth comply literally with the pure-food-and-drugs law, there can be no further excuse for the citizens of this commonwealth patronizing cheap mail-order houses in adjoining states, for, together with the personal assurance of these jobbers and manufacturers, this department will see that the goods placed on the market in Kansas will be as represented, pure and wholesome, and, taking all things into consideration, I believe equally as cheap as similar goods purchased elsewhere in the world. Cheap prices naturally command inferior goods, and the householder should not be tempted by the bait of bargain-counter prices if he wishes to avoid cheap and adulterated products.

LAWRENCE, KAN., January 14, 1907.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR SIR—I herewith present a report on the most recent work done in the food-analysis laboratory at the University. Only the most pressing work has been done, as we have not had a sufficient force to carry forward any extended investigation of special food products.

JAMS, JELLIES, AND PRESERVES.

Since the food-and-drugs act of June 30, 1906, has gone into effect, this class of goods will need more thorough overhauling and greater attention must be paid to proper labeling than with almost any other class. A large amount of stock, without doubt, remains on hand, which is not properly labeled, either by the original label or by stickers.

In addition to the samples previously mentioned, the following are reported:

No. 2706. Raspberry Jelly, Orchard brand. Bliss Syrup Refin-

ing Company, Kansas City. Preserved with sodium sulfite and artificially colored.

No. 2659. Cherries in Maraschino. Put up by Long, California. These are dyed red with anilin dye.

No. 2860. Congress Jam. Kansas City Wholesale Grocery Company. Colored with anilin dye.

No. 2869. Quince Jam. Dodson-Braun Manufacturing Company, St. Louis, Mo. Colored with anilin dye.

SYRUPS.

No. 2848. Merbell's Maple Sap. This is an artificial syrup.

No. 2849. Camp Kettle Maple Liquid. This label bears the statement: "A maple syrup of absolute purity." It is an artificial syrup, consisting mostly of cane sugar.

No. 2850. Old Manse Canadian Sap Maple Syrup. An artificial syrup, consisting mostly of cane sugar.

No. 2851. Camp Kettle Syrup. This sample, although bearing nearly the same trade-mark as the previous sample, has this statement on the label: "A proprietary article of food, packed from carefully selected stock, for those who can appreciate a good and wholesome article." The word "maple" does not appear on the principal label. A sticker on the side states that it consists of pure maple sugar and pure cane sugar. This has been one result of the enactment of the pure-food law.

No. 2852. Johnson's Gold Band Maple Syrup. This appears to be a genuine maple product.

No. 2853. Meadow Brook Plantation. "A pure evaporating-pan sugar-house molasses, Pointe Coupee Parish, Louisiana." A paster has, however, been placed on these goods, which reads: "The ingredients of this blend are sorghum-cane molasses and syrup." (Glucose.)

FLAVORING EXTRACTS.

No. 2878. Dr. Price's Flavoring Extract of Lemon. This sample gave much turbidity when added to water, and upon testing showed the presence of 6.8 per cent. of oil of lemon by volume. There is no evidence of artificial coloring.

No. 2879. Wild Flower Flavoring Extract of Lemon. Long Brothers Grocery Company, Kansas City. This sample produces no turbidity when added to water, which shows the absence of any appreciable quantity of oil of lemon. Artificially colored with coal-tar dye.

No. 2880. American Beauty Flavoring Extract of Lemon. Kansas City Wholesale Grocery Company. The sample gave no turbid-

ity with water, and no appreciable quantity of oil of lemon could be detected. Artificially colored, probably with naphthol yellow.

No. 2881. Standard Double Extract of Lemon. Hewson Chemical Company, Kansas City. As there is no turbidity produced by the addition of water, and no appreciable quantity of oil can be obtained, the sample is really only slightly flavored with the oil of lemon. It is artificially colored.

No. 2882. Pure Essence Strawberry. Hewson Chemical Company, Kansas City. This is an artificial extract, flavored with a variety of the higher ethers, and artificially colored to imitate the strawberry.

CANNED VEGETABLES.

No. 2886. Canned Peas, Randolph, Wis. Free from borax.

No. 2887. Canned Corn from Waverly, Iowa. There was no evidence of the presence of salicylic acid, borax, or saccharin.

No. 2834. Hanover High Grade Sugar Corn. Packed by the Hanover Canning Company, Hanover, Kan. This sample is free from saccharin or bleaching materials.

No. 2888. Canned Tomatoes, Webb City, Mo. Free from salicylic acid.

COCOANUT.

No. 2891. Cocoanut, Schepp's. Free from sulfites.

No. 2919. Larkin's Shredded Cocoanut. "First quality; contains all the oil of cocoanut. One-half pound. Price 18 cents." Larkin & Co., Buffalo. The net weight of this shredded cocoanut was $7\frac{3}{4}$ ounces, or $\frac{1}{8}$ ounce (4 per cent.) short. The package was sealed and enclosed in an impervious paper; so little if any loss could have been sustained by drying. A small quantity of sulfites, used, no doubt, as a bleacher or preservative, was found in the sample.

BREAKFAST CEREALS.

No. 2920. Wheat Flakes. Larkin & Co., Buffalo, N. Y. "One pound. Price, 15 cents." The net weight of the contents of this package was 14 ounces. This amounts to $12\frac{1}{2}$ per cent. The flakes then really sell for 17 cents per pound. It may be worth while to call attention to the fact that many of the so-called breakfast foods sell at a price which is entirely out of proportion to their nutritive value. More nutritive material can be bought in the form of rolled oats, for instance, for 5 cents, than can be bought in some of these special foods at from 11 to 17 cents.

BAKING CHEMICALS.

No. 2885. Cream of Tartar. Bought of Montgomery Ward & Co., Kansas City. Marked "Absolutely Pure; $\frac{1}{2}$ Pound." This sample is a genuine cream of tartar, but the net weight is one-third ounce short. This is the equivalent of 4 per cent.

CANDIES.

Nos. 2895, 2900. Ribbon Candy. These showy goods, which are found in the colors, violet, yellow, orange, and green, are all colored with anilin dyes. A comparatively large quantity is used, so as to give them a brilliant appearance. Although they are used quite largely for decoration, they may be purchased for consumption.

ICE-CREAM.

Many inquiries have come to the laboratory on account of the analyses of ice-cream reported in the previous BULLETIN. Until special rules are made by the State Board of Health, it may be fair to state that an ice-cream which contains 14 per cent. of milk-fat by weight, and no poisonous or injurious ingredients, will pass. This corresponds with the requirements of the federal pure-food-and-drug act, and material so made will be acceptable for interstate commerce. It should be noticed that this required per cent. is *by weight* and not by volume, and this provision in regard to the amount of milk-fat applies to the *finished product* as sold, and not to the cream used in its manufacture.

POISONED OYSTERS.

No. 2932. Sample received from Topeka. Marked "Sample of W. C. Rosth Tub Oysters. Sold to W. P. Smith & Son, oyster dealers, Topeka, and resold to Hindmans." It was noticed that the liquor had a greenish-blue color, and several cases of illness were reported by physicians as the probable result of eating these oysters. Upon examination they were found to contain quite a quantity of copper, which, of course, is poisonous. Oysters having a similar color were reported from Lawrence and other towns at about the same time. The amount of copper found will be reported later.

For assistance in the above work, the author is indebted to Mr. Frank Gephart.

Yours respectfully,

E. H. S. BAILEY.

A man who talks about a mule behind his back is on unsafe ground.—*Henry Watterson.*

DRUG ANALYSES, No. III.

The report of Professor Sayre on drug analyses and the analyses of certain spices and condiments is herewith presented, and affords very interesting and instructive reading. The drugs analyzed from the Ray Chemical Company and Charles S. Baker Company are from houses engaged in the mail-order business, who claim in their advertisements to sell for forty per cent. less than the wholesale druggists. It should always be borne in mind that the statements of firms offering to sell at greatly reduced prices under other firms doing a like business are to be carefully weighed, as it is often found that these articles are very inferior in quality, and, indeed, are worth no more than the amount paid for them. This fact, in addition to the more serious fact that they are often unreliable in alkaloidal strength, and, therefore, in medicinal qualities, should make physicians and others hesitate before placing orders with such houses. The same thing will apply with equal force to mail-order grocery houses.

LAWRENCE, KAN., January 12, 1907.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR SIR—I have the honor of presenting to your Board the third report on the examination of medicinal substances obtained by members of your Board in the open market from different parts of the state, and forwarded here for examination. Since my last report there have come to the laboratory samples of broken packages that contained medicinal substances under suspicion. Some of these were laudanums (tinctures of opium), which are interesting, and will be referred to later in this report.

Permit me to call attention, through your Board, to the far-reaching effect of the food-and-drug act upon language used upon patent medicines and druggists' specialties. It has been quite a common practice for the patent medicine proprietors and retail druggists to print phrases and sentences upon the label of their alleged remedies which are in the nature of exaggerations, and possibly in violation of the law. Thus, one reads that a certain preparation is a "sure cure for consumption," or a "positive cure for falling hair," or words of similar character. As we understand the law, this kind of language is prohibited by the act, which declares that a drug is misbranded if it bears a false or misleading statement. We have good reasons for believing that this provision is going to be so enforced as to compel patent medicines

and similar articles to be devoid of any exaggerated claims on the label, or accompanying the preparation in circular form. It is my desire that pharmacists be apprised of the provision stated. It seems to us that the phrase, "sure cure," is debarred. As to whether such phrases as "valuable remedies for coughs, colds, etc.," may be used, we leave to the judgment of those who are thinking upon this subject.

COFFEE AND ESTIMATION OF ITS VALUE.

Our investigation with regard to the estimation of the value of various coffees has led us to a conclusion similar to that which has been obtained with regard to tea, namely, that the price of the article is not in a direct ratio to the alkaloidal content; for example, we found that a tea rated at 25 cents per pound contained 2.49 per cent. of alkaloidal theine, while a tea at 90 cents per pound contained 3.73 per cent. of theine, and one at 60 cents per pound contained 3.67 per cent. theine, etc.

The same is true, we have found, with regard to coffee. A fine Mocha, for example, will contain 0.64 per cent. of caffeine, while another of a different variety, and about the same price, will contain 1.53 per cent. of caffeine. The caffeine content of coffee varies considerably, according to the locality where the bean is cultivated, some varieties yielding as high as 1.77 per cent. of alkaloid, while an excellent coffee, commanding as good a price, will yield as low as 0.64 per cent. of the alkaloid. The importance of this fact has never been applied, it seems to us, as it might be, as there are some who desire very much the stimulating effect of the caffeine, while others desire only the peculiar aroma of good coffee. It seems to us that the quality of roasted coffee is dependent upon the substances which occasion the peculiar aroma. These substances have thus far been practically unknown.

In our investigations in the laboratory we have collected some of the volatile aromatic constituents, and our examinations of these have led us to the conclusion that they are extremely volatile and very minute in quantity (about 0.06 per cent.) These volatile substances are of an acid character, and perhaps of phenolic origin,

We have yet no standard that would estimate the actual value of coffee from a commercial standpoint, but the bureau of chemistry of the United States Department of Agriculture, in its standard for this beverage, makes the following statement:

"1. Coffee is the seed of *Coffea arabica* L., or *Coffea liberica* Bull., freed from all but a small portion of its spermoderm, and conforms in variety and place of production to the name it bears.

"2. Roasted coffee is coffee which by the action of heat has become brown and developed its characteristic aroma; it contains not less than 10 per cent. of fat and not less than 3 per cent. of ash."

One of the best methods for the detection of adulteration of roasted coffee is the application of the microscopical examination. The finely powdered substances, if placed under the microscope, will betray admixtures very successfully, because coffee has a definite structure, and the integrity of the structure is maintained even in the finest powder.

If chicory be suspected from the microscopical examination, it can, in a measure, be verified by taking the specific gravity of decoctions of the suspected sample. The gravity of pure coffee is considerably lower than that of the chicory, and by taking advantage of this fact the percentage of adulteration of chicory may be fairly well worked out.

Our examinations of the coffee sent us thus far give us the following results:

Chase & Sanborn Coffee. For moisture: *a*, 0.196 per cent.; *b*, 0.194 per cent.; *c*, 0.192 per cent.; average, 1.94 per cent.

Chase & Sanborn Coffee. For ash: Average in four samples, 3.996 per cent.; fat, average of five samples, 16.055 per cent.

Union Pacific Tea Company's Coffee: Sample No. 1, Santos coffee, 18 cents per pound, gives average ash, 4.716 per cent. Santos coffee, at 20 cents per pound, average ash, 4.606 per cent.

We have received from your Board the Union Pacific Tea Company's ten samples of various coffees. We are now making ash and fat determinations of the samples, and we will be able to report upon these at a future time. The samples have been examined by the microscope for adulterations of foreign admixtures, and we have thus far found no trace of other foreign substances in these coffees. The ash determinations thus far seem rather high, but we could not rule out such samples from these data alone.

Laudanum (tincture of opium, broken package).—Some packages of suspicious laudanum have been sent to us to pass upon as to the morphin strength. Two of these samples have thus far been examined, and they prove to contain in one case 0.108 per cent. of morphin, and in the other 0.1935 per cent. of morphin. The official requirement for tincture of opium is that 100 c.c. of the tincture, by the official process of assay, shall contain 1.20 grams of crystallized morphin. We are endeavoring to trace the original source of the opium from which these tinctures are made. We are inclined to the opinion that there may be a demorphinated opium

upon the market, from which the unsuspicious pharmacist may prepare his laudanum. The physical characteristics of the preparations are in every respect similar to the official tincture.

Two samples of fluid extract of *nux vomica* have also come to hand, one of which, by the official process, assayed 0.54 per cent. of strychnin, and the other 0.575 per cent. of strychnin. The pharmacopœial requirement for this preparation is that each 100 c.c. of the fluid extract shall contain one gram of strychnin, or about one per cent.

Tincture of Iodin.—The pharmacopœial requirement for this preparation is that it shall contain 6.86 per cent. of iodine.

No. 1431. Tincture of iodine, from Ray Chemical Company, Detroit, Mich. Contained 6.312 per cent. iodine.

No. 1492. Tincture of iodine, from Chas. F. Baker & Co., Chicago. Contained 5.583 per cent. of iodine.

Tincture of Cinchona. United States Pharmacopœia requires that it contain 0.75 per cent. of anhydrous ether, soluble alkaloid.

No. 1430. Tincture of cinchona, from Ray Chemical Company, Detroit, Mich. Contained 0.222 per cent. of anhydrous ether, soluble alkaloid.

No. 1493. Tincture of cinchona, from Chas. F. Baker & Co., Chicago. Contained 0.5832 per cent. of anhydrous ether, soluble alkaloid.

Oil of Peppermint.—The official standard is, sp. gr., 0.894 to 0.914, at 25 c.c.; angle of rotation, 25° to 33°.

No. 1444. Oil of peppermint. Sp. gr., 0.903; angle of rotation, 28°.

No. 1472. Oil of peppermint. Sp. gr., 0.900; angle of rotation, 27.5°.

Chlorid of Lime.—Chlorinated lime should contain not less than 30 per cent. of available chlorine.

No. 1510. Chlorid of lime from Larkin Manufacturing Company, contained 32 per cent. available chlorine.

No. 1469. Chlorid of lime from Brookman, in sealed can, contained 2.2 per cent. of available chlorine.

No. 1449. Chlorid of lime from Brookman, in sealed can, contained 15.4 per cent. of available chlorine.

Ground Spices from Larkin Manufacturing Company.—Fifteen packages of ground spices of this company, sent to us for examination, show an average shortage in weight of 5.5 per cent.;

the maximum shortage being 14 per cent., and the minimum 0.2 per cent.

Ground Cayenne pepper should not contain more than 6.5 per cent. of ash. The sample of Larkin's ground Cayenne pepper contained 8 per cent. of ash. The other spices of this group yielded a low per cent. of ash, but the examination for essential constituents will be reported upon later. It is well known that ash determination alone will not condemn nor approve of this class of mill products.

Aloin.—Should volatilize without leaving a residue.

No. 1465. Aloin, from Mallinckrodt & Co., contained 0.28 per cent. of ash. In a former report we have stated that the ash content of the United States Pharmacopœia is entirely too low, and should be revised.

Tannic Acid.—Should contain not more than 0.2 per cent. of ash, and no gum, dextrin, or resin.

No. 1467. Tannic acid, broken package, contained 0.29 of ash and some resinous matter.

Chloral Hydrate.—Should have a melting-point of about 58°, and should contain no alcoholate.

No. 1473. Chloral hydrate. Melting-point, 51° C.; no alcoholate present.

No. 1840. Crystals moist; melting-point, 52°.

Menthol.—Should have a melting-point of 63°; should gelatinize without leaving a residue; should contain no thymol.

No. 1475. Menthol, broken package. Melting-point, 42°; no thymol present; a trace of residue left.

Resin of Podophyllum.—Should contain not more than 0.7 per cent. of ash.

No. 1478. Resin of podophyllum, broken package. Contained 1.5 per cent. of ash. We are inclined to think that the pharmacopœial requirement of ash is too low, but we have samples in stock yielding as low as 0.4 per cent.

Glycerin.—Should contain none of the below-mentioned impurities.

No. 1420. Glycerin. Contained traces of sulfates and iron.

No. 1441. Contained traces of sugar, butyric acid, and chlorid.

No. 1399. Glycerin. Butyric acid and acrolein present.

No. 1479. Glycerin. Contained traces of butyric acid and iron.

All the above broken packages.

Sodium Carbonate.—Should be monohydrated, and contain not

less than 85 per cent. of pure anhydrous sodium carbonate and 14.5 per cent. of water.

No. 1462. Broken package. Contained 32.2 per cent. of water.

No. 1447. Broken package. Commercial sample contained 17 per cent. of moisture.

Calcium Hypophosphite—Should contain no phosphate or sulfate, arsenic, or heavy metals.

No. 1463. Calcium hypophosphite. Contained phosphates or sulfates.

No. 1439a. Calcium hypophosphite, from Powers & Weightman, in paper carton. Contained phosphates or sulfates, and trace of heavy metals.

No. 1439b. Calcium hypophosphite, from Powers & Weightman. Contains phosphates or sulfates, and trace of heavy metals.

We have followed, in the above report, suggestions of your Board in giving firm names connected with original unbroken packages.

L. E. SAYRE.

New Method for Generating Formaldehyde Gas.

Schoch claims for his method that it has the advantages of not requiring any special form of apparatus, of cheapness and freedom from danger of fire. The following substances are required: Good quicklime in lumps, commercial sulfuric acid, and ordinary forty-per-cent. formaldehyde solution. A shallow vessel of earthenware or metal is all the apparatus necessary. Sulfuric acid may be purchased at any drug-store for ten cents a pound, and forty-per-cent. formaldehyde solution for from forty to fifty cents per pound. For every 1000 cubic feet of space are required one pound of formaldehyde solution, one-half pound of sulfuric acid, and three pounds of quicklime. It has been found that just half of these quantities are enough for 1000 cubic feet, but to guard against excessive loss by leaks these quantities are recommended. The acid and the formaldehyde are first mixed in an earthenware vessel by pouring the acid into the formaldehyde. Then the lime is placed in the shallow vessel in the center of the room. All openings to the room are carefully closed, the mixture is poured on the quicklime, and the operator leaves the room. The rooms should remain closed for from five to eight hours.—*Texas Medical News*.

"Health persistently adhered to adown the alphabet will eventually spell wealth."

SECRETARY'S REPORT.

Quarterly Meeting, December 20, 1906.

(Concluded from December Bulletin.)

CONDITIONS OF PUBLIC HEALTH DURING THE PAST YEAR.

The following number of cases and deaths from contagious and infectious diseases have been reported in the past year, which are compared with the number reported the year previous:

| TYPHOID FEVER. | | | DIPHTHERIA. | | |
|----------------|------------|---------|-------------|------------|---------|
| | Cases. | Deaths. | | Cases. | Deaths. |
| 1905..... | 1,728..... | 397 | 1905..... | 1,800..... | 251 |
| 1906..... | 1,555..... | 287 | 1906..... | 2,151..... | 259 |
| SCARLET FEVER. | | | SMALLPOX. | | |
| 1905..... | 1,359..... | 76 | 1905..... | 4,116..... | 33 |
| 1906..... | 1,247..... | 37 | 1906..... | 1,671..... | 3 |

It appears from this that, aside from diphtheria, the number of cases occurring within the past year is less than the year previous, notwithstanding our growing population, which speaks well for the vigilance of county health officers and the more effective means put in operation for disinfection and isolation. With the more rapid means of communication about us these latter days, we can expect for a good many years to come the annual recurrence of these contagious diseases. Typhoid fever, however, is more clearly and definitely a preventable disease, and excites our comment and arouses our alarm.

NEW REGISTRATION LAW.

The statistics as gathered in this office are manifestly inaccurate and of only approximate value, due to the inadequate and cumbersome system of reports through county health officers. These officials are usually underpaid, the system generally in vogue being that of advertising for bids for doing the work supposed to be done by such an official, and the one making the lowest bid receives the appointment at the hands of the board of county commissioners, regardless of his personal fitness or scientific training to do the work required by this Board. It is my judgment that the State Board should be permitted to name the county health officers, or at least have the power for their removal when they refuse or neglect properly to perform their duties, and that their compensation should be fixed by law in accordance with the population of their respective counties, as other county officials are generally paid. We can hardly expect better work than we now have until this antiquated

system of the appointment of health officers is abolished and proper compensation and selection of men be made for this important office. I want, however, to make personal and public acknowledgment of the faithfulness and efficiency of the present county and municipal health officers of the state. There are probably a half-dozen who should be engaged in some other occupation, but, from the numbers which must be considered, they are the exception and not the rule.

Discussion of this question naturally leads up to the consideration of the necessity for a new registration law, which was discussed somewhat at length in the November BULLETIN. To briefly summarize, I would call the Board's attention to the fact that the United States Department of Commerce and Labor, through the bureau of the census, has made special request that our legislature pass a new registration law, by means of which accurate and trustworthy vital statistics may be gathered in this state, which will not only be of immediate value to our own citizenship, but will pass current as fulfilling the requirements of the federal government. This action has been requested by a joint resolution passed by Congress, and it is to be hoped that the bill presented, which has been formulated by the bureau of the census, and is almost an exact copy of the Pennsylvania law which has been found to work so admirably, will receive your support and influence.

RAILWAY-CAR SANITATION.

Two years ago this Board asked for legislation requiring transportation companies doing business in this state to improve their sanitary conditions by complying with certain well-known sanitary requirements in coach cleaning, and the abolishment of certain practices inimical to public health. This legislation met with an early and untimely death in the railroad committee of the senate. Nevertheless, every effort has been made to accomplish the same purpose through correspondence, and appeal to these companies, together with organization with other state boards of health.

That reforms have been greatly needed in this respect there can be no doubt, and that the present construction of railway-coaches, and their long runs without the opportunity of efficient cleaning, renders the problem one of no easy solution. Keeping in mind, therefore, these difficulties, rules were prepared and finally suggested that were thought to be entirely reasonable, and which could be put into operation without great added expense to the transportation companies. The rules selected were the modified rules adopted by the Indiana State Board of Health, by a commission

composed of a committee from the Indiana State Board of Health and a committee representing the railroad and steamboat lines doing business in that state. It was thought that the rules agreed to by this joint committee would be such as would meet with the approval of transportation companies in this state, and be of practical and ready application. Accordingly these rules were submitted early in the summer. Copies were also sent to the secretaries of the state boards west of the Mississippi river, asking for their co-operation in the general movement.

It is with pleasure that we are able to announce the acceptance of those rules in a somewhat modified form by most of the transportation companies doing business in Kansas. First, we have the written assurance of the Pullman company that their cars are thoroughly and efficiently fumigated at monthly intervals, and whenever they are known to have carried an infectious disease, while those cars running to health resorts and the Southwest are fumigated at more frequent intervals. The floors, closets, passageways, carpets, cuspidors and sinks receive thorough and efficient cleansing, and all the bedding is as thoroughly aerated at the end of each run as climatic conditions will permit at the time. Taken all together, then, it may be said that the Pullman service in Kansas is conducted in a sanitary and efficient manner.

The first of the transportation companies to accept these rules was the Union Pacific railroad. The modified rules as adopted by it are as follows:

RULE 1. Steam-railway coaches. Day coaches shall be thoroughly cleaned at the end of each trip, and in no instance shall a day coach go uncleaned longer than two days. The thorough cleaning of the day coaches shall consist as follows: (a) Windows and doors shall be first opened and the aisle strip, which should be of rubber, if there be any, removed from the car; (b) all upholstery dusted and brushed; (c) floor mopped or swept, after it has been sprinkled with water, to which may be added an approved disinfectant; (d) after cleaning as in (c), the floor should be scrubbed with soap and water, to which soda-ash or like cleansing agent may be added, and, after scrubbing, the floor should be mopped with a solution of kresol of one or two per cent. strength; (e) all arms of seats, panels between windows, window ledges, windows, doors and door-knobs shall be washed with soap and water, to which a cleansing agent may be added; (f) closet floors and walls shall be cleaned by sweeping and washing and wiping with a disinfecting solution (kresol), and urinals and hoppers thoroughly cleaned and disinfected with kresol; (g) water-coolers shall be frequently emptied, rinsed and scalded, and shall be filled with palatable drinking water when in service; (h) the ice should never be handled with the hands, but a pair of ice-tongs or an ice-scoop should be used; (i) and lastly, day coaches shall be disinfected with formaldehyde gas in quantities of not less than forty fluid ounces

of forty-per-cent. formaldehyde to each coach, by means of the Behm sprinkler and sheet method, at the period of general cleaning and renovation, said period not to exceed ninety days, and also whenever a case of any listed disease is known to have been carried. Plush seats and backs shall be removed when possible, and dusted by air blast.

RULE 2. Coaches shall be provided with cuspidors. Placards shall be displayed in all railway waiting-rooms of the company, having plainly displayed thereon the following notice:

"SPITTING ON THE FLOOR IS FORBIDDEN.

"Consumption, la grippe, coughs, colds and all diseases of the air passages are spread by spitting, and these maladies kill thousands of people annually. It is, therefore, forbidden to spit on the floor.

"Penalty, ———."

It is the duty of trainmen to warn against violating this health rule. By order of the State Board of Health.

RULE 3. Parlor, buffet and dining-cars shall be cleansed at cleaning terminals, as set forth in rule 1. Carpets and draperies to be removed, dusted, sunned, and aired, provided meteorological conditions permit. Food boxes, refrigerators, closets, drawers and cupboards to be cleansed, scalded and treated with a one- or two-per-cent. solution of kresol at least once a week in spring, summer and autumn months, and every two weeks in winter months.

RULE 4. Conductors and brakemen in charge of steam trains shall pay proper attention to ventilation, and shall promptly reprove and warn all persons who spit on the floor or otherwise befoul the car in which they are riding. They shall also inquire concerning any case of sickness which they may notice, and determine, as best they can, whether or not it is a listed disease, and if found or suspected to be listed, the health officer at the next stop may be appealed to for the purpose of caring for the case as seems best.

RULE 5. The list diseases are declared to be: Smallpox, diphtheria, scarlet fever, erysipelas, and measles. All common carriers and employees are forbidden to knowingly carry any person afflicted with the above-named diseases.

RULE 6. Dry sweeping of cars while in transit is prohibited. When cars are swept while in transit, wet sawdust should first be scattered on the floor, when the sweeping should be done with an ordinary broom or broom-brush.

A. F. JONAS, *Surgeon U. P. Rly.*

The Union Pacific railroad is to be congratulated in its prompt and forward movement in this respect. Certainly their equipment is kept in as hygienic condition as the present construction and method of operation will permit.

Following this was the acceptance of the Missouri, Kansas & Texas railroad, and later the Frisco road. The rules adopted by the latter, in a somewhat modified and briefer form, are as follows:

RULE 1. Coaches must be thoroughly cleaned at the end of each trip, and shall consist as follows: Windows, doors and ventilators shall be opened, and all matting, carpets, upholstered seats and rests removed. Where compressed air is not used, seats must be swept and dusted.

RULE 2. Cars shall be swept or blown out with compressed air, floors scrubbed with soap and water, to which soda-ash or like cleansing agent may be added, and mopped with one-per-cent. solution of formalin (1½ ounces of formalin to one gallon of water). Use water sparingly; floor must not be flooded.

RULE 3. Arm rests, walls and window ledges shall be wiped off with damp cloth or waste, and windows washed and wiped.

RULE 4. Cuspidors, urinals and hoppers cleaned and disinfected with a one-per-cent. solution of formalin.

RULE 5. Water-coolers rinsed and scalded.

RULE 6. Coaches shall be disinfected with formaldehyde gas at the period of general cleaning, said period not to exceed ninety days, and also whenever a person having a contagious disease has been carried.

RULE 7. Dry sweeping of cars while in transit is prohibited; sawdust should be scattered on the floor and the sweeping done with damp broom or brush.

These have been accepted by your secretary as entirely satisfactory to this Board.

The practice of dry sweeping of coaches while in transit is still continued by some of the railroad companies, which is not only a matter of great discomfort to the passengers occupying such coaches, but a positive menace to their health also. It cannot be successfully denied that such practice is not dangerous, for, with the cars being occupied almost daily by one or oftentimes many tubercular cases seeking the Western climate, without means provided for their expectoration, which invites spitting upon the floor, which soon becoming dried is stirred up with the dust and refuse of the car by the train porter in the practice of dry sweeping, must render the air germ-laden, and a serious menace to the health of the occupants of the car. Then account must be taken of numerous other infectious and contagious diseases—the milder, walking forms of typhoid, infecting closets and lavatories, the various types of throat and mouth infection, etc. It would seem, therefore, that legislation is needed, and should be asked for, which will place the sanitary control of railway-coaches and electric cars under some responsible authority. Your instruction is asked in this important matter.

WORK OF THE PAST QUARTER.

The foregoing, then, is a brief summary of the work transacted by the Board during the past year until the present quarter. The amendment of our rules on pure food was postponed at the last meeting of the Board, and remains as unfinished business. Since that time the national committee, created by law for that purpose, have formulated certain rules and regulations to govern the provisions of the national pure-food-and-drug laws. These rules have

been published in the BULLETIN, and are no doubt familiar to each member of this Board. It is suggested that these rules be adopted by this Board as the rules governing our own food laws, in so far as they are applicable, and also pending the action of the coming legislature in the passage of our proposed new pure-food law. It would perhaps seem out of place at this time to consider further amendment of our original rules adopted by the Board a year ago. Should the legislature see fit to take favorable action upon the bill which will be presented it will be time enough at our March meeting to definitely work out such rules as are appropriate for their government in this state.

A number of trips have been made throughout various parts of the state, investigating the cause, ways and means of suppressing smallpox and diphtheria, and the general sanitary condition of certain cities. The suggestions offered in each case were promptly carried out, in so far as they were able to do so.

In conformity with a resolution passed by the Board at its last meeting, visitations have been made by committees thus appointed to the principal packing-houses in the state. The report of these visits will be made by the committees. It was thought best to do this rather than make any effort to compile the various reports by the secretary. These committees will no doubt be ready to report at this meeting. In a general way it may be observed that the sanitary condition of the great packing-houses doing business in Kansas is good, that numerous improvements have already been made and are being made for the better sanitary condition and comfort of the employees, and that perhaps, best of all, preservatives and coloring matter are no longer being used in the meat products manufactured therein. The rigid government inspection prevents, quite effectively, in my judgment, the use of diseased or unwholesome meats.

The revelations made last summer in visiting a number of private slaughter-houses suggested the inspection of all such by the county health officers of the various counties, and, in accordance with this idea, the order was made for such inspection. From the reports received, it would seem as if there should be some *special legislation* concerning the inspection by the health authorities of this state of *private slaughter-houses and meat-markets*. The rigid government inspection now practiced at the great packing plants makes it quite impossible for shippers to dispose of diseased animals, or others, except they be in prime condition; *hence the market for such must be found with the local butchers*. This

being the case, together with the unsanitary surroundings of the average country slaughter-house, has already indicated the urgent need of some sort of system of inspection, by which the people may be as thoroughly assured of clean and wholesome products from those sources as they now are from the great packing-houses. This might be comprehended in the work of the food inspector, as suggested in the forthcoming bill, but I believe, in addition thereto, the duties and responsibilities of the county health officer should be enlarged so as to make him responsible for the control of public and *quasi*-public institutions doing business in this district.

DAIRY PRODUCTS.

The publication of butter analyses in our June and October BULLETINS called forth many comments, mostly of a commendatory character, but a few of a decidedly different nature. Reference to the analyses contained in the June BULLETIN shows that, of the three samples analyzed, all three contained an excess of water allowed by the national law, and a corresponding decrease in butter-fat. The publicity given these analyses had the effect in a large measure of reducing the overrun, which hitherto has been a source of great profit to many of the creameries doing business in this state.

The analyses as published in the October BULLETIN showed two samples as containing an illegal quantity of water, and that all but one of the twenty-one samples thus analyzed showed a net weight of less than one pound. Publication of these analyses called forth several letters, which from their nature call the Board to account for their action in the analyses and publication, and which I desire to present at this time. . . .

PROSECUTIONS UNDER THE PURE-FOOD LAW.

In this connection your secretary desires instructions as to the action of the Board after the 1st of January, when the collection of samples will be continued. Thus far no suits have been instituted for violation of the adulteration laws, first, because we desire to give wholesalers and retailers an opportunity to dispose of such illegal stock as they might have on hand; and second, we have depended entirely upon the moral persuasion of publicity, which has no doubt been a mighty factor in determining the action of food manufacturers and dealers to comply cheerfully and heartily with the Board's requirements. Is it the intention of the Board to institute suits and the collection of fines for all future violations? I desire specific instructions on this matter.

THE BOARD'S NEEDS AND NECESSITIES.

The authority and power conferred upon the State Board of Health by law is of such a nature, being in most instances merely of an advisory character, as to render it powerless in the enforcement of its orders, particularly in matters of nuisances and water pollution. The entire health laws should be revised as such, giving the Board additional authority.

To summarize, therefore: The laws which we need, and must have, if we carry out the objects for which this Board was created, are a nuisance law, a new pure-food law, the United States Geological Survey law, and its companion, the sewer and water law. I believe, also, that provision should be made in our laws to give the State Board of Health sanitary control of the barber shops in the state. The former barber bill that was repealed at our last legislature was cumbersome, and failed in its object. My judgment is, that there is not so much a necessity for the examination of barbers in order that only those who understand how to shave a face and cut hair in the latest style shall be entitled to enter that occupation, as to have some authority to compel those conducting such barber shops and public bath-houses to keep them in a sanitary condition, including the proper care of instruments, towels, lavatories, etc. This cannot be done except by a system of inspection, which might be comprehended by the Board having authority to appoint a general inspector, who shall be an advisory member of the Board, and under the control and orders of the Board, and that he in turn appoint eight district deputies to look after the public places within their districts.

The Board at its last meeting provided for two new rules, which apply directly to barber shops, which rules prohibit the serving in any barber shop of a person infected with syphilis, and prohibits the serving in any public bath-house of any person suffering from gonorrhea. These rules are of manifest importance to the public patronizing these places, but cannot be expected to be enforced unless we have some system of inspection. The necessary expenses incident to such inspection could be borne by the revenues received by the inspectors, and would therefore be no burden to the state. I desire your instructions in this matter.

The dairy products of Kansas are of such value and importance as in my judgment to necessitate a separate and distinctive law for their interest, inspection, and control, and such law has been framed largely after the Minnesota law and has been submitted to the experts of the Agricultural College for their approval.

CONCLUSION.

Kansas bears the proud distinction among her sister states as being the foremost in measures of reform. One of the frequent comments heard is that Kansas "does things." In a communication received from the secretary of the National Association of Boards of Health with the Marine Hospital Service, inquiry is made as to why Kansas has not hitherto taken part in these annual conferences. A portion of this letter is herewith submitted as indicating the splendid standing our state departments have abroad, and which also emphasizes the need of a more generous recognition of this department by our legislature, in order that we may accomplish the purpose for which we were created.

"We need only to say that certain departments of your state, notably your department of agriculture, confer distinction on your state and are sources of honorable pride to your people. Your State Board of Health, important enough in ordinary times and vitally important in times of pestilence and disaster, will reward your people with equal satisfaction if given an equal chance with the boards of sister states. We ask your legislature to reflect that unless the functions of this Board are in constant exercise, and make use of all the facilities offered in the present status of American public hygiene, your people may suffer avoidable damage, because some extraordinary emergency may find your officials unprepared with the instruments of defense, while the people of neighboring states are uncertain about the character and fitness of your public-health work.

"Begging you to believe that we desire the aid of Kansas in organizing the national defense more than we insist upon the utility of this conference in developing the sanitary defense of Kansas, we are, sir, most respectfully yours,

RICHARD H. LEWIS, President,

JOHN S. FULTON, Secretary,

National Association Boards of Health with M. H. S.

With the material wealth of Kansas increasing at an unprecedented rate, with the education, culture and refinement keeping equal progress with the accumulation of wealth, the time can no longer be delayed when efficient and progressive laws should be placed upon our statute-books, by which the life and health of the citizens of this great commonwealth may be properly safeguarded. Surely these precious lives are of more value than the golden store of grain of which we boast, and the cattle which feed upon a thousand hills, but which thus far have received our best and first attention.

"Ethics is not a matter of tongue, but of conscience."

National Supervision and Standardization of Food.

Read before the section on State Medicine, British Medical Association, Toronto, Canada, August 24, 1906, by H. L. E. JOHNSON, M. D., Washington, D. C.

The relation of pure food to the health of a nation is equally important with good government of a nation. Each year shows not only an increase in the efforts of hygienists and governments to protect the individual in the matter of food, but also the slow, but steady progress of food-producing and controlling corporations in their adulterating, embalming, misbranding and counterfeiting processes, culminating in the disgusting and nauseating revelations of the past few months, which have shaken faith throughout the civilized world in the purity of almost every article of food and drink.

Proprietary drug compounds are, in many instances, either inert, wholly false in their claimed composition, dangerous to health, or habit producing. Under various names they are hawked about, through a variety of methods, leaving in their wake disappointment, poverty, complicated illnesses, habits and mental wrecks.

Wealth, greed of the tariff-protected corporations and their almost unlimited opportunities for fraud give birth to these abuses. Ignorance on the part of the laity of the facts, or lack of appreciation of the health effects, together with the failure of the physicians and hygienists to educate the public in these matters, foster this state of affairs. Publicity is the potent remedy for these evils.

The food of a nation should be as genuine as the nation's bond and currency. Counterfeiting of either should be a felony, and as such should be severely punished.

Because of its application to present conditions, I quote from the report* of the committee on "Department of Public Health for the United States" of the Pan-American Medical Congress, adopted at Mexico City, Mexico, November, 1906, the following:

"We further recommend: The passage of uniform national and state laws regulating the importation, exportation, sale, inspection, and standard of meats, fruits, and foodstuffs, water-supply, ice, milk, and beverages, prohibiting adulteration and providing adequate penalty for violation.

"The passage of uniform national and state laws regulating the manufacture, importation, exportation and sale of drugs and chemicals, with provision for their inspection, and penalties for their adulteration. And a further provision requiring the labeling with

* For full report see United States senate document, No. 33, Fifty-fifth Congress, first session.

exact formula of all proprietary medicines and compounds, and providing penalties for violation.

"The passage of uniform laws, national and state, regulating the sanitation of railroad-cars, both steam and street, barges and ships, steam and sail, public vehicles, ambulances, laundries, slaughter-houses, morgues, hospitals and dispensaries, jails and reformatory institutions, with penalties for violation.

"The passage of uniform laws, national and state, regulating the hygienic management of contagious diseases, personal and house quarantine, vaccination, hygiene of dentistry, barber shops, public baths and gymnasiums, amusement halls, migration of tramps and profligate persons, disposal of dead bodies, garbage, and sewage, draining of land, and removal of weeds and decaying vegetation, and providing penalties for violation.

"The passage of uniform laws, national and state, providing for and regulating disinfecting plants, steam, dry heat, and chemical, for mails, foreign and domestic, clothing, bedding, money, persons, etc. Bacteriologic laboratories, animal industry and inspection plants, state and national hospitals, and retreats or sanitariums for the treatment of habitues, inebriates, venereal, tubercular and insane persons, with special laws for commitment to and discharge from the same. District nursing for the poor, sick, obstetrical, contagious diseases, etc.

"The passage of uniform laws, national and state, providing for the appointment of state and national medical experts and the punishment of medical crimes.

"The passage of uniform laws, national and state, regulating state and interstate medical, surgical and dental practice, which will protect the same as a science, and not as a trade.

"We further recommend adequate appropriation of money by the several states and the general government for the scientific investigation of public-health matters in this and foreign countries, and the suppression of diseases, endemic and epidemic.

"We further recommend that appointment to and the tenure of medical offices shall depend upon professional ability and efficiency, and not on political influence.

HENRY L. E. JOHNSON, M. D.,

President Committee on Department of Public Health."

The health of the public, through an appropriate department of the government, should be efficiently protected, and all food, beverages, drugs and drug compounds, their preparation, preservation, storage, and sale, should be standardized and regulated. International standardization should and can be made universal by treaty with the several powers.

Opposition to standardization and control emanates principally from the large dividend-paying, tariff-protected corporations, which, when reforms are urged, make their usual threat—"to increase the

cost to the consumers"—and in other ways obstruct and defeat proposed remedial legislation.

Cold-storage foods, undrawn poultry, canned goods and meat-packers' productions offer a broad field for medical and hygienic investigation, for determining food etiology and placing responsibility, in connection with the alarming increase in intestinal diseases, deaths from appendicitis, and the so-called "acute indigestion." A few successful legal actions, civil or criminal, based on established bad-food causation of illness or death, would promptly drive disease-producing foods from the market.

From a politico-industrial point of view, the recent legislation in "the states" providing for pure food and meat inspection is excellent so far as it goes, but, from a medico-hygienic standpoint, is not entirely efficient or satisfactory, as it tends to conserve the financial interests of the producer and jeopardize the health of the consumer, by delaying the operation of the food bill, and by omitting the date of slaughter, production and inspection from the government certificate or label, thereby placing an immense quantity of meat and meat products, prepared under presumably careless and objectionable methods, now in cold storage or warehouse, on an equality with, and indistinguishable from, recent products prepared under careful government supervision. An identical inspection stamp or certificate will be placed alike on meat slaughtered five years and that slaughtered one month, without any distinguishing marks to guide the innocent purchaser. Thus, the consumer is deprived of his right of selection, choice and exact knowledge of meat and meat products, by the absence of dates of slaughter and inspection. Meat slaughtered and kept in cold storage five or ten years may be wholesome at the time of inspection, but how much longer will it keep so? The government's certificate given in such cases is legally final, but such a guaranty is at least doubtful as to healthfulness.

The American people, contributing this year, from their tax funds, the vast sum of \$3,000,000 to enforce this special legislation, designed to correct inexcusable irregularities of meat-producing corporations, should have, irrespective of political faith, supported the demands of their president, and insisted on further protection of their health, through adequate inspection, dating certificates or labels, and severe penalties for violations.

The man worth while is he who is ever on the lookout for better means of relief for suffering humanity.

Chew Your Food.

From the American Food Journal.

One of the latest health fads, says the Duluth *Herald*, has every appearance of being an uncommonly good one.

It is nothing more or less than to chew your food before swallowing it.

You say you do chew your food, but, unless you are vastly different from the majority of people, you don't do anything of the kind. You come about as near bolting it whole as you comfortably can. That lets your teeth and jaws out of the duty they were made to perform and throws the burden upon the stomach, which was never made to do such work.

The theory of the new fad is that you should make a point of chewing your food until there is nothing left to chew. Then you will get the real taste out of your food, you will enjoy it twice as much, and your stomach, with an easy task before it, will put you into a glow of well-being and physical comfort. The digestive tract will be so happy over the new experience that it will make your whole system sing with joy, and you will not only get twice as much pleasure out of eating, but twice as much nourishment. And after all, though many forget it, strength and nourishment are what you eat for—not to satisfy hunger. Hunger is merely the animal instinct that tells you when it is time to store up more nourishment.

The fad has become pretty wide-spread under the leadership of one Fletcher, who has given his name to it, and you will note in many eating places sober gentlemen solemnly chewing away for dear life. They are advocates of Fletcherism.

Irving Fisher, a Yale professor of political economy, has just published the results of some experiments made with nine Yale students, beginning in January and lasting about five months. The purpose of the experiments was to show whether thorough mastication of food increased its nutritive efficiency, especially its strength-producing efficiency.

The test was a vindication of Fletcherism. The students continued to lead their accustomed lives, mostly sedentary, and they made no particular change in diet, eating what they relished. But what they ate they chewed. They chewed it until it could n't be chewed any more. They found in this method increased enjoyment for the palate and vastly improved digestion. Furthermore,

they found that they ate less, because they got more out of what they did eat than they did when they were bolting food nearly whole, and they needed less, therefore. In June they had, entirely through preference, reduced their consumption of meat to one-sixth of what they had at first thought necessary. They were increased fifty per cent. in their powers of endurance, and were able to do twice as much physical work, as shown by the gymnasium tests, as they could do in January.

This method of getting health and strength is sensible. It is cheap. Try it.

That Infernal Oil Heater.

We have received a communication from a prominent civil engineer, who has given considerable attention to public-health matters, and who chanced to be present for a short time during the recent school of instruction for health officers. In commending the work undertaken by the State Board of Health, particularly that feature of it which makes the restriction and prevention of consumption its object, he further says:

"Let us make war upon the so-called gas heater, or oil heater, so commonly used to warm rooms. I think they are very unhealthful. One of these will exhaust the vital oxygen from the air more rapidly than half a dozen breathing people. The products of the flame are carbon dioxid and moisture. The air of a room in which one has been burning a short time is utterly unfit to breathe. It must seriously affect the lungs and blood, predisposing to attacks of influenza and pneumonia. Most people who use these burners neglect to ventilate the room properly, or to provide a chimney for the flame products. Indeed, they would argue that the very purpose is to heat the air of rooms as rapidly and *cheaply* (that is the main point) as possible; so the prompt removal of the air is to be avoided, as tending to partly defeat the purpose in view. A recent newspaper item reported the death of a man and wife, I think, from the effects of one of these stoves. They suggest to me the French fashion of committing suicide—charcoal-fire fumes in a tight room—only the process is not quite so rapid. If living-rooms were really very tight, the number of fatalities would be great. I have no doubt that they are the cause of much ill health and debility."—*N. H. Sanitary Bulletin*.

"Each lawless thought will mar the plan;
Each wasted day will stint the man.
Would'st thou excel? Let purpose run
A thread of gold from sun to sun."

Rules for Tuberculosis Patients.

Rules for the patients of the Henry Phipps Institute for the study, treatment and prevention of tuberculosis :

1. Don't spit on the pavement, on the street, nor into any place where you cannot destroy the germs which you spit up.

2. Do not swallow any spit which comes up from your lungs or which comes out of the back part of your throat.

3. Spit into a spit cup when it is possible to do so.

4. Always use a spit cup with a handle to it, so that you can hold it close to your mouth.

5. When you use a china or earthenware spit cup, always keep lye and water in it, and scald out the spit cup once or twice a day with boiling water.

6. When you use a tin spit cup with a paper spit cup inside burn the paper cup at least once a day and scald the tin cup with boiling water.

7. Never use a handkerchief or a rag or any material other than paper to spit in or to wipe your mouth with.

8. When you cannot spit into a spit cup, spit into a paper napkin.

9. Always use a paper napkin to wipe your mouth with after spitting, and be careful not to soil your hands.

10. Always carry a cheap paper bag in your pocket or caba to put paper napkins in which you have used.

11. When you have used a paper napkin, either to spit in or to wipe your mouth with, fold it up carefully and put it away in a paper bag.

12. Every evening, before going to bed, burn your paper bag, together with the napkins which you have deposited in it.

13. Do not let any spit get on your clothing, or your lips and hands, or your bedclothes, or carpets, or furniture, or on anything about you, wherever you may be.

14. If, by any accident, any spit should be deposited anywhere else than in your spit cup or in your paper napkin, take pains at once to destroy it, either by taking it up and putting it in the fire or by putting lye and water on it.

15. If you have a moustache or beard, shave it off or crop it close.

16. Always wash your lips and hands before eating or drinking, and rinse out your mouth.

17. If you have a running sore, take up the matter which is given off with absorbent cotton and burn it.

18. Avoid handshaking and kissing. These customs are dangerous to you as well as to others. They may give others consumption; they may bring you colds and influenzas, which will greatly aggravate your disease and may prevent your recovery.

19. Do not cough if you can help it. You can control your cough to a great extent by will power. When you cough severely hold a napkin to your mouth, so as not to throw out spit while coughing.

20. Sit out of doors all you can. If you have no other place to sit than on the pavement, sit on the pavement in front of your house.

21. Don't take any exercise except upon the advice of your doctor.

22. Always sleep with your windows open, no difference what the weather may be.

23. Avoid fatigue. One single fatigue may change the course of your disease from a favorable one to an unfavorable one.

24. Go to bed early. If you are working, lie down when you have a few moments to spare.

25. Don't take any medicine unless it has been prescribed by your physician. Medicine may do harm as well as good.

26. Don't use alcoholic stimulants of any kind.

27. Don't eat pastry or dainties. They do not nourish you and they may upset your stomach.

28. Take your milk and raw eggs whether you feel like it or not.

29. Keep up your courage. Make a brave fight for your life. Do what you are told to do as though your recovery depended on the carrying out of every little detail.

30. Always keep in mind that consumption can be cured in many cases and that it can be prevented in all cases.

31. If your own disease is too far advanced for you to recover, console yourself with the idea that you can keep those who are near and dear to you from getting it.

Don't be too ready to quit;
Never let up on your grip;
Nothin' like hang-on and grit,
Keepin' a stiff upper lip.
Oaks is cut down chip by chip;
That's what the copy-books say—
Granite is wore by the drip.
Jest keep a-peggin' away.

— *Hi Parmalee's Ballade of Perseverance.*

Report of Inoculation of Rabbits for Suspected Rabies.

Mr. C. P. Scott, of North Topeka, was severely bitten on the arm by a strange dog shortly before the holidays. This dog belonged on the south side. It had been acting strangely for several days before it ran away from home. On the day that Mr. Scott was attacked, the dog was killed.

With the assistance of two medical students, I was able to procure the head of the dog. An emulsion of the spinal cord was made by triturating a small portion in sterile water. About two cubic centimeters of this emulsion was injected into subdural space of a white rabbit, an opening being made in the skull by means of a small trocar. A second rabbit was injected by pressing aside the eyeball and injecting the emulsion behind the eye, in the region of the optic foramen. Both animals stood the operation well. They did not seem to suffer, and began to eat within a few minutes after the work was completed. They were lively and well for ten days. After that they began to lose in weight and grow stupid.

On the fifteenth day the rabbit which had been injected through the eye died with symptoms of dumb rabies, while the other rabbit died on the seventeenth day with symptoms the same as the first. Rabbits never develop the convulsive form of rabies.

This method of diagnosing rabies is part of the routine work of all the large laboratories. Some pathologists also diagnose the disease by examining a cross-section of the cord of the animal suspected. This, when done by a reliable person, is even better than the injecting of rabbits, as it saves time. Mr. Scott is now at the Pasteur Institute, in Chicago. SARA E. GREENFIELD.

The following observation is from a well-known physician of this state: "I have often noticed how ants will swarm around a little mass of tuberculous sputum, and I have no doubt these same ants are the ones we find later on in our sugar-bowl, etc." Do you take the hint?—*Florida Health Notes*.

Of all the states, but three shall live in story:
Old Massachusetts with her Plymouth rock,
And old Virginia with her noble stock,
And sunny Kansas with her woes and glory.
These three will live in song and oratory,
While all the others with their idle claims
Will only be remembered as mere names.

—*Ironquill*.

Notes.

Quality, not quantity, is what counts.

Refuse to be sidetracked by discouragements.

The flighty purpose ne'er overtook unless the deed go with it.—*Shakespeare.*

"One reason why we can't see our faults is because vanity blinds one eye and egotism the other."

Worry weakens the will, perverts the physical functions, and poisons both the mind and body fluids.

"And now there remain these three, the fault-finder, the gossip, and the hypocrite, but the rankest of them is the hypocrite."—*International Journal of Therapy.*

Sing a song of acid,
Bucket full of dye;
Four and twenty bob veal
Soaked in alkali.
When the mess is cooking
Shake the borax can;
Is n't that a dainty dish
To set before a man?

—*Exchange.*

"PLUCK WINS! It always wins. Though days be slow
And nights be dark 'twixt days that come and go,
Still pluck will win. Its average is sure.
He gains the prize who can the most endure;
Who faces issues, he who never shirks;
Who waits and watches, and who always WORKS."

Your best plans may get a black eye,
And your spirits get the blues,
But if your vertebrae's in order
You can win out if you choose.

—*Cent per Cent.*

Little bits of refuse,
Little grains of dope,
Make the boneless chicken.
And the scented soap.

—*Exchange.*

"The human mind a precious casket is,
And every noble, helpful thought a gem.
Choose carefully thy jewels."

"The man worth while
Is the man who can smile
When everything goes dead wrong."

GRASS.

GRASS is the forgiveness of nature—her constant benediction. Fields trampled with battle, saturated with blood, torn with the ruts of cannon, grow green again with grass, and carnage is forgotten. Streets abandoned by traffic become grass-grown like rural lanes, and are obliterated. Forests decay, harvests perish, flowers vanish, but grass is immortal. Beleaguered by the sullen hosts of winter, it withdraws into the impregnable fortress of its subterranean vitality, and emerges upon the first solicitation of spring. Sown by the winds, by wandering birds, propagated by the subtle horticulture of the elements which are its ministers and servants, it softens the rude outline of the world. Its tenacious fibers hold the earth in its place, and prevent its soluble components from washing into the wasting sea. It invades the solitude of deserts, climbs the inaccessible slopes and forbidding pinnacles of mountains, modifies climates, and determines the history, character, and destiny of nations. Unobtrusive and patient, it has immortal vigor and aggression. Banished from the thoroughfare and the field, it abides its time to return, and when vigilance is relaxed, or the dynasty has perished, it silently resumes the throne from which it has been expelled, but which it never abdicates. It bears no blazonry of bloom to charm the senses with fragrance or splendor, but its homely hue is more enchanting than the lily or the rose. It yields no fruit in earth or air, and yet should its harvest fail for a single year, famine would depopulate the world.

—John James Ingalls.

BULLETIN

OF THE

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No. 2.

FEBRUARY, 1907.

VOL. 3.

Service is the royal coin that bears the inscription of Jehovah.

It will be known as the Kansas Food and Drugs Act.

"That which in horse we call mettle, in a man we call ambition,
and neither horse nor man is much account without it; but we
need a bridle for one and a conscience for the other."

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Oysters, page 40.

Drug Analyses, No. 4, page 42.

Kansas Food and Drugs Act, page 47.

VITAL STATISTICS

Reported to the Kansas Board of Health for January, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever | | Smallpox. | | Measles. | |
|-------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|------------------|-----------|-----------|-----------|----------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| Allen | 1 | 1 | 3 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Anderson | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Barber | 5 | 5 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Barton | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 0 | 20 | 0 |
| Bourbon | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 9 | 0 | 0 | 0 |
| Brown | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Butler | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Chase | 1 | 1 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 30 | 2 |
| *Chautauqua | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Cherokee | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cheyenne | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 |
| Clark | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 2 | 15 | 0 | 0 | 0 |
| †Clay | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| †Cloud | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 |
| Coffey | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| †Comanche | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cowley | 1 | 1 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Crawford | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Decatur | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickinson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Douglas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Edwards | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Elk | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Ellsworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finney | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 2 | 0 | 1 | 0 |
| †Ford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| *Franklin | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geary | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| †Gove | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Grant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Gray | 0 | 0 | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Greeley | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greenwood | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Hamilton | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| *Harper | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Harvey | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| †Haskell | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| Hodgeman | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Jackson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Jefferson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Jewell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Johnson | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kearny | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kingman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Kiowa | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette | 0 | 0 | 0 | 0 | 5 | 4 | 2 | 0 | 0 | 0 | 1 | 0 |
| †Lane | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Lincoln | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Logan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lyon | 0 | 0 | 0 | 0 | 2 | 1 | 12 | 0 | 0 | 0 | 1 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Marion..... | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 0 |
| Marshall..... | 0 | 0 | 1 | 0 | 0 | 0 | 18 | 0 | 1 | 0 | 0 | 0 |
| McPherson..... | | | | | | | | | | | | |
| Meade..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Miami..... | | | | | | | | | | | | |
| † Mitchell..... | | | | | | | | | | | | |
| Montgomery..... | 1 | 0 | 8 | 2 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| * Morris..... | | | | | | | | | | | | |
| † Morton..... | | | | | | | | | | | | |
| Nemaha..... | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 24 | 0 |
| * Neosho..... | | | | | | | | | | | | |
| Ness..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Norton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 0 |
| Osage..... | 3 | 3 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osborne..... | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| * Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Phillips..... | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie..... | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rawlins..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 0 | 0 | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 2 | 1 | 0 | 0 | 2 | 1 | 2 | 0 | 3 | 0 | 0 | 0 |
| * Rice..... | | | | | | | | | | | | |
| Riley..... | 2 | 0 | 0 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | 2 | 0 |
| Rooks..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Russell..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Saline..... | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 4 | 0 |
| † Scott..... | | | | | | | | | | | | |
| * Sedgwick..... | | | | | | | | | | | | |
| † Seward..... | | | | | | | | | | | | |
| Shawnee..... | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| * Smith..... | | | | | | | | | | | | |
| Stafford..... | 3 | 3 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| † Stanton..... | | | | | | | | | | | | |
| † Stevens..... | | | | | | | | | | | | |
| Sumner..... | 1 | 1 | 0 | 0 | 8 | 1 | 10 | 0 | 0 | 0 | 0 | 0 |
| * Thomas..... | | | | | | | | | | | | |
| Trego..... | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 |
| Wabaunsee..... | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| * Wallace..... | | | | | | | | | | | | |
| Washington..... | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 0 | 0 | 0 | 1 | 0 |
| Wichita..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Wilson..... | | | | | | | | | | | | |
| † Woodson..... | | | | | | | | | | | | |
| Wyandotte..... | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 2 | 0 |
| Cities: | | | | | | | | | | | | |
| * Atchison..... | | | | | | | | | | | | |
| Coffeyville..... | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 0 |
| Fort Scott..... | | | | | | | | | | | | |
| Kansas City..... | 27 | 23 | 35 | 1 | 27 | 3 | 4 | 0 | 0 | 0 | 3 | 0 |
| Leavenworth..... | 3 | 3 | 1 | 1 | 5 | 0 | 4 | 0 | 0 | 0 | 3 | 0 |
| * Parsons..... | | | | | | | | | | | | |
| Topeka..... | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 0 | 1 | 0 | 9 | 0 |
| * Wichita..... | | | | | | | | | | | | |
| State Institutions, | | | | | | | | | | | | |
| Totals..... | 77 | 55 | 65 | 7 | 167 | 26 | 126 | 4 | 126 | 0 | 126 | 2 |
| For Jan., 1906..... | 93 | 37 | 102 | 15 | 220 | 29 | 125 | 5 | 123 | 1 | 187 | 6 |

* No report.

† No contagious diseases in county.

‡ No health officer.

FOOD ANALYSES, No. VII.

Dr. J. S. Crumbine, Secretary State Board of Health, Topeka :

DEAR SIR—I herewith present a report on the recent work done in the food-analysis laboratory at the University.

COPPER IN OYSTERS.

In a previous BULLETIN, (vol. 3, p. 7, No. 2932,) oysters were reported as containing copper. Since the publication of that report some quantitative determinations of copper in oysters have been made, with the following results. The sample above mentioned contained an amount of copper equivalent to 0.09 of 1 per cent. of blue vitriol. Assuming that a quart of oysters weighs 33.35 ounces, this quantity would contain about 13 grains of copper sulfate or blue vitriol.

No. 2975. A sample of oysters purchased in Lawrence, said to be shipped by Booth & Co. This sample contains an extremely small quantity of copper, so small that the amount could not be readily determined.

No. 2976. Oysters purchased in Lawrence, said to be shipped by G. P. Patterson, Baltimore. This sample contains an amount of copper equivalent to 0.004 of 1 per cent. of blue vitriol, or, on the basis above mentioned, a quart of oysters would contain 0.6 of a grain of blue vitriol.

No. 2977. Oysters purchased in Lawrence, said to have been shipped by the Western Fish and Oyster Company, St. Louis, and to be from the Atlantic coast. This sample contains an amount of copper equivalent to 0.03 of 1 per cent. of blue vitriol, so that a quart of these oysters would contain 5 grains of this substance.

No. 2978. Oysters purchased in Lawrence, shipped from the South. This sample contains an amount of copper equivalent to 0.004 of 1 per cent. of blue vitriol, so that a quart of oysters would contain 0.6 of a grain of this substance.

In regard to the occurrence of copper in oysters, this has been ascribed to various causes, but there is no evidence that would lead one to believe that it is introduced by the shipper or dealer. Herdmann and Boyce, who have made extensive investigations, state in the Proceedings of the Royal Society of London, 1899, that "a diseased condition we found in a certain American oyster very soon brought us in contact with the vexed question of the greening of oysters, and one of the first results we arrived at was

that there are several distinct kinds of greenness in oysters. Some of them, such as green Marennes oysters and those of some rivers on the Essex coast, are healthy, and others, such as Falmouth oysters, containing copper, and some American oysters rebudded on our coasts and which have the pale green color, 'leucocytosis,' described in our former paper to the Royal Society, are not in a healthy state. Some forms of greenness are certainly associated with the presence of a largely increased amount of copper in the oysters, while other forms of greenness have no connection with copper, but depend upon the presence of a special pigment, 'marennin.'

The investigators find that there is more copper in the green American oysters than in the colorless ones, and more proportionately in the green parts than those that are less green. They conclude, therefore, that the green color is due to copper. There is more iron in the green American oyster than in the colorless. In the Falmouth oysters, containing considerable copper, much of this copper is certainly mechanically attached to the surface of the body and is insoluble in water, so that it may be a basic carbonate. These oysters may also contain more copper in the tissues than does the normal colorless oyster. In these oysters the cause of the green color may be the same as in the green American variety.

Langworthy, in "Fish as Food," regards the greening of oysters to be due to the consumption by the oysters of certain forms of green algæ, the coloring material of which is soluble in the tissues and juices of oysters, and apparently harmless. This coloration is evidently due to a different cause from that of some of the samples previously examined.

Although a small amount of copper in oysters may not be an indication that they are injurious, yet the comparatively large quantity mentioned in some of these cases indicates that such oysters should not be used as food. The soluble compounds of copper are poisonous. A medicinal dose of copper sulfate, used sometimes as a tonic, is from three to four grains; if a larger quantity—from five to fifteen grains—is administered, it will act as an emetic. As small a quantity as seven drachms of blue vitriol or copper sulfate has been fatal to the life of an adult. Large quantities produce symptoms of poisoning, such as violent vomiting, and, later, severe pain in the stomach and lower bowels. A small quantity of copper is found in the human body, especially in the liver. In this organ the amount has been found to be 1 part

in 500,000, and in the kidneys 1 part in 100,000. This is, perhaps, not a necessary constituent of these organs, but rather some copper that is incidentally taken in with the food and has been very slowly eliminated. It is possible that some of the cases of so-called ptomaine poisoning, which have been ascribed to the presence of ptomaines in oysters, may really be due the presence of copper or some poisonous mineral salt. We know that there have been cases of severe poisoning from eating oysters that were absolutely fresh; so in these cases, if there is a ptomaine present, it would be one naturally found in the oysters, and not formed during the partial decomposition of the food.

Another point to be considered is whether, since copper unites so readily with albuminous bodies such as are present in oysters, it forms an insoluble compound which would not be broken up in the alimentary canal. Although it is probable that in the stomach this decomposition would not fully take place, without doubt the copper "ions" would ultimately get into the circulation. Finally, it is probable that in most cases only harmless quantities of copper are found in oysters, but as far as investigations have gone it would seem that green oysters are to be regarded with suspicion, as their green color may be due to an excess of copper. Small quantities of copper taken repeatedly may act as an astringent, and, since copper is to some extent a cumulative poison, may produce the ill effects known as chronic copper poisoning. In the above determination the author is indebted to Dr. R. W. Curtis for the electrolytic determination of copper by the rotating cathode. This method is extremely satisfactory, even for minute quantities of copper.

No. 2931. Jello. This is a pinkish powder having a sweet taste, recommended to thicken ice-cream and for making various desserts. It consists of gelatin sweetened with cane sugar, and colored with cochineal. No starch was found in the material.

No. 2952. Preservaline. Sold as a preservative for cider, used in the proportion of four ounces to the barrel. This powder consists practically of sodium benzoate, a well-known preservative. It costs at retail from \$1.00 to \$1.25 per pound.

ICING MATERIAL FOR CONFECTIONERY.

On account of the cost of some icing materials, especially chocolate, the custom has grown up, in some localities, of substituting for the chocolate coating, in confectionery and chocolate cake, a mixture of various substances, which are put on the market for this purpose.

No. 2980. Cremoline. Made by John G. Buckler & Co., 86 Michigan avenue, Chicago. This is a brownish paste, having an agreeable odor, the taste of chocolate and vanilla, and a slightly gritty feel between the teeth. This paste contains 7.6 per cent. of a solid fat, 16.34 per cent. of brown ash, also glucose and starch, probably with some chocolate, and flavoring material. The ash consists mostly of iron oxid, containing some manganese oxid. It is therefore quite similar to burnt sienna.

The use of this material, containing as it does mineral substances, is plainly a violation of the pure-food law. Although the iron oxid is not considered injurious, yet it is evidently an adulterant, in fact, a cheap "paint" material, used to take the place of the expensive chocolate. Regulation 15 of the food-and-drugs act states that "mineral substances of all kinds are specifically forbidden in confectionery, whether they are poisonous or not."

No. 2973. Chocolate Icing. Manufactured by Gumpert, 177 Hudson street, New York. This is also a brownish paste with a sweet taste, and an agreeable chocolate-vanilla odor. Upon ignition it leaves 9.23 per cent. of white ash, which consists essentially of magnesium oxid. The brown coloring matter is organic in this case and not mineral, as in the previous sample. Glucose is also present and is the sweetening material. There is also a small amount of fat, but no starch.

No. 2974. Banana Icing. This is a light brown paste, having a sweet taste, and somewhat the odor and taste of bananas. The basis of this preparation is magnesium oxid, of which eight per cent. is left upon ignition, and glucose, with artificial flavoring and some organic coloring matter. Unless the fresh fruit is used, it is not convenient to obtain a banana flavor without the use of artificial ethers and similar compounds. This consists ordinarily of a mixture of amyl acetate and butyric ether. This, as well as the previous sample, contains the mineral substance magnesia, which, although not in any sense poisonous, would not be allowed in a food product. It is plainly a cheap adulterant, intended to take the place of some expensive substances.

Respectfully submitted.

E. H. S. BAILEY.

LAWRENCE, February 20, 1907.

OYSTERS.

A fresh oyster is one of the most palatable and easily digested of sea foods, if it be fresh and uncontaminated. How many of us in the interior have ever experienced the "flavor of the sea"? Not many, I trow. Why? Because commercialism has robbed this luscious bivalve of its inheritance, and by the time it reaches the table it has been so soaked in raw hydrant water, so buffeted by chunks of doubtful ice, so carted about in wooden water-soaked tubs, so ladeled with unwashed dippers, to say nothing about the flies and unsanitary surroundings, that there is little resemblance in size, color or flavor to its former self.

Oysters intended for shipment should be packed fresh from the shell, with as little delay as possible, shucked with clean hands, and with as little handling as is practicable, and should not be soaked or "floated."

Oysters are often "floated" to increase their bulk and give them the appearance of being fat. By "floating," is meant where the oysters are taken when still in the shell, put into a float large enough to contain a number of bushels, and let down into fresh water, where they are allowed to drink as much as they will take. "Soaking" oysters means that after they have been shucked from the shell, they are put into a large tank of fresh water, where they are left from three to twelve hours, occasionally stirring them, so that as much ⁴fresh water is absorbed, as possible, thereby increasing their bulk measure. When these soaked or floated oysters are packed, they appear solid, but after they stand a few days or are shaken by transportation the water will gradually seep out. This water is what we have hitherto called the oyster liquor. The soaking or floating is done for the express purpose of increasing the bulk measure of the oyster, and which often amounts to from ten to fifteen per cent. It is therefore fraudulent and should be prohibited. Moreover, the oyster breaks down and undergoes decomposition more readily, which increases the dangers from ptomaine poisoning, or calls for the use of preservatives to prevent commercial loss.

Upon their receipt by the interior jobber they are often subjected to further watering, in addition to the melting of ice in such as are shipped by the tub method. Inquiry and investigation has disclosed the fact that to seven gallons of the shipped oysters three gallons of raw hydrant or melted-ice water is added. In no in-

stance have we been able to find that this fraudulent water is even sterilized.

While no proof is at hand that such fraudulent practice has been the means of the spread of typhoid fever by the use of polluted hydrant water, it at least throws a doubt on former investigations where the typhoid infection was traced to the infected oyster, which was said to have been contaminated by sewage on the feeding-grounds. At all events, this added raw water further increases the tendency of fermentation and decay, bleaches the oysters, and destroys the delicious "sea flavor," while adding to the illegal profit of the dealer at the rate of fifty cents per quart for the surplus water.

Most people regard the white, plump oyster as preferable to the gray, rather thin oyster. The natural color of the oyster is a dingy gray, sometimes slightly tinged with green or red, according to the locality where grown and the time of year they are gathered. The white, plump oyster is the one that is water-soaked and bleached and has lost the "sea flavor." The size of the oyster, depends in the main on age, the very large ones being from four to five years old.

Many people believe the canned oysters are better than others. The fact is that canned oysters are simply the usual tub oyster, re-packed by jobbers in interior cities. Instead of a quart they hold a pint and a half, which, in turn, is one pint of solid meat and one-half pint of hydrant water; or, in the case of counts, twenty-six large oysters, the rest water, which we deluded "land-lubbers" have thought all these years to be oyster liquor.

The proper cleansing and sterilization of the old-fashioned wooden tub, which is soaked with the juices and water, is quite impossible, but it is all the more surprising to learn that in most instances the only cleansing attempted is washing by the hose with hydrant water. It is to be noted, however, that the wooden tub is rapidly giving way to the enameled container, in which the ice is packed around the can, instead of in with the oysters, and that the demand for solid oysters with the "sea flavor" is keeping pace with the people's increasing knowledge of these practices. This department will rule that watered oysters are adulterated within the meaning of the law, and will insist that containers, carriers and surroundings be sanitary. By another season the people of Kansas may get acquainted with the "sea flavor."

S. J. CRUMBINE, M. D., *Secretary.*

DRUG ANALYSES, No. IV.

LAWRENCE, KAN., February 18, 1907.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

DEAR SIR—Permit me to present a fourth report to your Board relating to the work as it has progressed in this laboratory as regards drugs and medicines since date of January 12.

I desire to state in connection with this report, in a preliminary way, that the necessity for research work is apparent along the line of methods of assay and methods of estimating values of articles which are more or less of medicinal value, such as spices. Should the ash from a spice exceed the United States standard (maximum quantity of ash), this would point to adulteration. It seems to us that a minimum standard of ash, below which adulteration might be suspected, should be recognized. In a number of the spices, thus far examined, the ash percentage is far below the standard. We are now endeavoring to estimate the value of spices selected and ground by ourselves, using for this purpose the average good grade of article. We are also endeavoring to devise a short process for determining the percentage of aromatic substances contained in these. The spicing quality of a spice is after all *the index of its quality*. Elaborate analyses showing the amount of tannin, fiber, etc., it seems to us, are wholly unnecessary in the estimation of this class of products. When we shall have accomplished this work to our satisfaction, we shall have some data upon which to base our estimations of this class of food accessories and remedial agents.

Tincture of Ginger.—We have a number of samples of tincture of ginger, some of these labeled tincture of Jamaica ginger. It is quite evident that some of these tinctures are not made from ginger root of the Jamaica variety, but are tinctures made by the extraction of African ginger, or less expensive varieties than that of Jamaica, or mixtures of these. It would seem to us that a ginger made from African ginger should not be labeled tincture of Jamaica ginger, although the amount of oleoresin (active constituent) were present in proper proportion.

ALKALOIDAL DRUGS.

In regard to standards for the official preparations of alkaloidal drugs, permit me to state that members of the committee of revision of the United States Pharmacopœia are busily engaged in care-

fully reviewing the processes of assay, the percentage requirement for assayed drugs, etc. It is not at all probable that any material changes will be made in the present standards, but the review of the United States Pharmacopœia by manufacturing and industrial chemists will make some valuable contributions to the subject of standardization. When this work shall have been finished it will greatly add to the value of the data we have, and will aid materially in solving the problems of standardization as applied to medicinal chemicals made on a large scale. In our research work at the laboratory, I wish to express my thanks to those manufacturers and others who have very kindly rendered valuable service with regard to promptly answering questions relating to drugs and their preparations. They have been very generous in sending to the laboratory samples of what they considered average products, and have been willing to answer any questions concerning their products, methods of assay, etc. In the official process for the assay of opium and preparations of opium, I have found it necessary, in some cases, to vary the official process. A tincture made from some lots of opium is not easily assayed by the official process; they will not give a nice, clean assay. I merely mention this to show that the analyst must occasionally vary the official process slightly in order to be just, and obtain the maximum result, which is only fair to the manufacturer. It may be of interest to show what are the average percentages of alkaloids obtained from the commercial alkaloidal drugs as they are obtained by drug buyers. The following list is contributed by a well known assayer, and shows the variations which are continually experienced:

Belladonna Root.—The United States Pharmacopœia requires 0.5 per cent. of alkaloid. From the commercial sources of the root are found such variations as: 0.29, 0.52, 0.41, 0.54, 0.70, 0.18, 0.44; average, 0.44 per cent.

Cinchona.—United States Pharmacopœia requires 5.0 per cent. of anhydrous cinchona alkaloids. Commercial barks yield: 3.6, 4.2, 4.8, 10, 8.6, 6, 6.2, 5.2, 7.26, 6.28, 6.39, 5.83, 5.2, 7.2; average, 6.19 per cent.

Cinchona, Red.—5.9, 5.2, 7.5, 6, 4.6, 8.3, 4.2, 8, 5.8, 6, 7.5, 4.2, 9, 6.88, 7.35, 8.5; average, 6.62 per cent.

Coca.—United States Pharmacopœia requires 0.5 per cent. The commercial leaves yield the following percentages: 0.68, 0.6, 0.48, 0.69, 0.4, 0.62, 0.39, 0.8, 0.65, 0.98, 0.5, 0.72, 0.35, 0.64, 0.51, 0.85; average, 0.61 per cent.

Colchicum Root.—United States Pharmacopœia requires 0.35 per cent. alkaloid. The commercial samples have been reported to yield as follows: 0.4, 0.55, 0.52, 0.74, 0.5, 0.54, 0.52, 0.58, 0.45, 0.42, 0.52, 0.58, 0.34, 0.6, 0.31, 0.54, 0.3, 0.54; average, 0.49 per cent.

Colchicum Seed.—Should contain, according to the United States Pharmacopœia, 0.55 per cent. The following percentages are found in commercial varieties: 0.56, 0.4, 0.67, 0.72, 0.52, 0.55, 0.45, 0.8, 0.62, 0.67, 0.32; average 0.57.

Conium (fruit).—United States Pharmacopœia requires 0.5 per cent. of alkaloid coniine. The commercial varieties are found to yield the following percentages: 0.42, 0.48, 0.75, 0.91, 0.74, 0.74, 0.73, 0.65, 0.40, 0.43, 0.82, 0.84, 0.57, 0.43; average, 0.61 per cent.

Hydrastis.—United States Pharmacopœia requires 2.5 per cent. of hydrastin. The following percentages have been found in the commercial drug: 1.9, 1.7, 2, 2.8, 2.05, 2.3, 1.55, 2.05, 2.3, 2.62, 2.44, 3.15, 2.1, 1.55, 2.4, 2.3, 2.3, 2.95; average, 2.24 per cent.

Hyoscyamus.—United States Pharmacopœia requires 0.08 per cent of total alkaloids. The commercial drug furnishes the following percentages: 0.07, 0.06, 0.11, 0.10, 0.11, 0.06, 0.12, 0.10, 0.10, 0.09, 0.11, 0.12, 0.09, 0.05, 0.11, 0.12, 0.07, 0.14, 0.14, 0.14, 0.06; average, 0.09 per cent.

Stramonium.—United States Pharmacopœia requires 0.35 per cent. of alkaloids. The following percentages are found in commercial supplies: 0.26, 0.43, 0.28, 0.35, 0.44, 0.38; average, 0.35 per cent.

Nux Vomica.—United States Pharmacopœia requires 1.25 per cent. of strychnin. Commercial varieties have been found to contain 1.37, 1.24, 1.5, 1.31, 1.24, 1.37, 1.41, 1.28, 1.46, 1.02, 1.03, 1.51, 1.25, 1.28, 1.38, 1.51, 1.25; average, 1.30 per cent.

The above list of assays shows conclusively the necessity for standardized or assayed drug for the purpose of making preparations such as tinctures, fluid extracts, etc. The market is now becoming supplied with these. In the assay of jalap for resin, we have found that the percentage of resin may be raised or lowered according to the way in which the official process is manipulated. We feel that the standard is too high and more specific statements should be made as to the details of the assay. We are not fully persuaded that, for the assay, *percolation* with ether is entirely satisfactory. Undoubtedly any defect of detail in the official process or standard will be corrected. We trust the percentage requirement will be lowered.

Podophyllin.—We find that there are two distinct grades of this resin upon the market, one of which is strictly United States Pharmacopœial, this being practically free from ash. There is another podophyllin that does not meet the ash percentage and solubility requirement. This is of a yellow color, and therapeutically answers the requirements of podophyllin. We have inquired into the difference of these two products, and it seems that the official product is a comparatively expensive one, and the price is not in any way compensated for by its smaller dose. Numerous tests have shown that 1.1 grains of the second cheaper variety of podophyllin actually contains about one grain of the United States Pharmacopœial product. The difference in cost is tremendously greater than this. It would seem, therefore, that your committee of rules and regulations should be instructed that they should not discourage the production of this cheaper product, for the reason that, from a therapeutic viewpoint, the activity of the two podophyllins is nearly the same when given in equal dose. It is to be hoped that your committee of rules and regulations will be allowed discretionary power to decide questions of this sort in conformity with the spirit rather than the letter of the law as it applies to the state of Kansas.

Coffee.—Ten samples of coffee sent us through your board from the Union Pacific Tea Company have been examined, giving the following results:

None of the ten samples, when examined under the microscope, show any impurities that might be detected this way.

The chemical analyses consisted in separating the fat, the ash, the caffee-tannic acid and caffeine, and taking the specific gravity of a standard decoction. This decoction was made by taking 10 grams of coffee in 100 c.c. of water, counterbalancing the flask, and then boiling for a quarter of an hour. It was then placed on the balance and the original weight restored by adding water. This decoction was then filtered, cooled to 15.5° C., and its specific gravity taken. The specific gravity of a decoction of pure coffee thus prepared does not exceed 1.009.5, while that of a decoction of roasted chicory gives a specific gravity 1.021.7.

RESULTS.

| No. 1528. Santos, at 18 cts. | |
|-----------------------------------|-------|
| Fat | 13.5% |
| Ash | 4.716 |
| Caffeine | 0.5 |
| Caffeo-tannic acid | 8.94 |
| Specific gravity (too high) | 1.01 |

| No. 1529. Santos, at 20 cts. | |
|------------------------------|--------|
| Fat | 14.8% |
| Ash | 4.60 |
| Caffeine | 0.645 |
| Caffeo-tannic acid | 8.78 |
| Specific gravity | 1.0095 |

| | |
|----------------------------------------------|---------|
| No. 1533. <i>Bourbon Santos</i> , at 25 cts. | |
| Fat | 14.28 % |
| Ash | 4.604 |
| Caffeine | 0.72 |
| Caffeo-tannic acid | 12.10 |
| Specific gravity | 1.0085 |

| | |
|------------------------------------------|---------|
| No. 1530. <i>Java Blend</i> , at 25 cts. | |
| Fat | 14.28 % |
| Ash | 4.776 |
| Caffeine | 0.84 |
| Caffeo-tannic acid | 12.18 |
| Specific gravity | 1.008 |

| | |
|----------------------------------------|---------|
| No. 1531. <i>Peaberry</i> , at 25 cts. | |
| Fat | 12.78 % |
| Ash | 4.82 |
| Caffeine | 0.66 |
| Caffeo-tannic acid | 10.06 |
| Specific gravity | 1.007 |

| | |
|-----------------------------------------|----------|
| No. 1532. <i>Maracaibo</i> , at 25 cts. | |
| Fat | 14.108 % |
| Ash | 4.61 |
| Caffeine | 0.98 |
| Caffeo-tannic acid | 9.82 |
| Specific gravity | 1.008 |

| | |
|------------------------------------------|---------|
| No. 1534. <i>Java Blend</i> , at 30 cts. | |
| Fat | 14.54 % |
| Ash | 4.28 |
| Caffeine | 1.040 |
| Caffeo-tannic acid | 13.77 |
| Specific gravity | 1.007 |

| | |
|--------------------------------------------|---------|
| No. 1535. <i>African Java</i> , at 30 cts. | |
| Fat | 13.45 % |
| Ash | 4.35 |
| Caffeine | 1.28 |
| Caffeo-tannic acid | 12.79 |
| Specific gravity | 1.0065 |

| | |
|----------------------------------------------|---------|
| No. 1536. <i>Java and Mocha</i> , at 35 cts. | |
| Fat | 13.72 % |
| Ash | 4.89 |
| Caffeine | 1.048 |
| Caffeo-tannic acid | 10.577 |
| Specific gravity | 1.004 |

| | |
|----------------------------------------------|---------|
| No. 1537. <i>Java and Mocha</i> , at 40 cts. | |
| Fat | 13.36 % |
| Ash | 4.40 |
| Caffeine | 1.18 |
| Caffeo-tannic acid | 10.62 |
| Specific gravity | 1.0052 |

The results of the analyses of these coffees are very satisfactory. The coffees are remarkable for their uniform low per cent. of caffeine, and in fact very remarkable for the uniform results they have given. It would indicate that they have all come from about the same source.

Tincture of Aconite.—United States Pharmacopœia requires 100 c.c. of the tincture to contain 0.045 grams of aconitine.

No. 1434. Tincture of aconite from Ray Chemical Company, Detroit, Mich. Found when assayed by United States Pharmacopœia method to contain 0.048 grams of aconitine in 100 c.c.

No. 1501. Tincture of aconite from Chas. S. Baker & Co., Chicago, Ill. Contained .04096 grams of aconitine in 100 c.c.

Fluid Extract of Aconite Root.—United States Pharmacopœia requires that it shall contain 0.40 grams in 100 c.c.

No. 1499. Fluid extract of aconite root from Chas. S. Baker & Co., Chicago, Ill. Gave 0.256 grams of aconitine in 100 c.c.

No. 1491. Fluid extract of aconite root from Ray Chemical Company, Detroit, Mich. Gave 0.1972 grams of aconitine in 100 c.c.

Tincture of Ginger.—As stated above, there are some tinctures of ginger that came to us apparently made of either a mixture of Jamaica ginger and African ginger or wholly of African ginger. A tincture of ginger made from the Jamaica variety of the root, having the average amount of volatile oil in it, when made into a 20 per cent. tincture, will give an extract that will contain from

0.235 to 0.240 per cent. of volatile oil. A 20 per cent. tincture of African ginger will yield an extract that will contain from 0.40 to 0.45 per cent. of volatile solids. These determinations were made recently by ourselves from commercial roots—tinctures being prepared from them.

No. 1515. Essence of Jamaica ginger, Larkins. This preparation was made apparently from either a mixture of African ginger on an unpeeled variety of Jamaica ginger. The extract from this contains 0.36 per cent. of volatile solids.

No. 1505. Essence of Jamaica ginger, Montgomery Ward & Co., Chicago. This preparation corresponded more closely to a Jamaica ginger. The volatile oil contained in the extract from this tincture was 0.226 per cent.

Fluid Extract of Nux Vomica.—The United States Pharmacopœia requires that each 100 c.c. shall yield one gram of strychnine.

No. 1496. Fluid extract of nux vomica, Chas. S. Baker & Co., Chicago. This preparation yielded 0.6308 grams in 100 c.c. of strychnine.

No. 1495. Fluid extract of nux vomica, Ray Chemical Company. This preparation yielded, when assayed, 0.5312 grams of strychnine in 100 c.c.

L. E. SAYRE ,

Director of Drug Analysis for the State Board of Health.

The Kansas Food and Drugs Act.

To the Druggists and Grocers of Kansas:

The pure-food-and-drugs bill was published in the official state paper February 16, and is now a law. The act is almost an exact copy of the federal food and drugs law in so far as it is applicable to a state. The machinery for its enforcement is supplied by the creation of a chief food-and-drug inspector and four assistants. The State Board of Health is charged with the enforcement of the law, and is authorized to make rules and regulations, which will include the duties of the inspectors, the collection of samples, etc.

The Board desires to assure the trade that their interests will be fully guarded and every assistance offered them to the end that the law may be fairly and impartially enforced. To accomplish this purpose, the first visit of the inspectors will be largely one of instruction and advice, pointing out such goods as are manifestly illegal on their face, instructing in such things as are not clear to the dealer, and warning against such things or practices as are in violation of the law, rules, and regulations.

Special attention will be given to sanitation, and all places and things will be required to be kept in as sanitary and wholesome condition as possible. These changes, where found necessary, will be required to be made at once. The Board bespeaks your hearty cooperation, and assures you that it desires to be helpful by such advice and assistance as it may be able to give to build up a better and more wholesome business than you have thus far enjoyed. To those who wilfully and premeditatedly violate the law we would reiterate the sentiment expressed by Secretary Wilson, of the United States Department of Agriculture, that "they will probably be the first to suffer the penalties."

BULLETIN

OF THE

Kansas State Board of Health.

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No. 3.

MARCH, 1907.

VOL. 3.

The State Board of Health, at their quarterly meeting held March 7 and 8, adopted rules and regulations for the enforcement of the new Kansas food and drugs law, February 14, 1907, and elected the following inspectors: For drug inspection, Mr. A. H. Roby, Stafford; for food inspection, Mr. John Kleinhans, Topeka, Mr. Harry Bell, Kansas City, and Mr. A. G. Pike, Fort Scott. The inspectors will begin their official duties April 1.

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VITAL STATISTICS

Reported to the Kansas Board of Health for February, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever | | Smallpox. | | Measles. | |
|------------------|--------------------|---------|-------------------|---------|------------------|---------|------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Allen..... | 0 | 0 | 3 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Anderson..... | | | | | | | | | | | | |
| Atchison..... | 4 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 |
| *Barber..... | | | | | | | | | | | | |
| Barton..... | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 |
| Bourbon..... | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| *Brown..... | | | | | | | | | | | | |
| Butler..... | 1 | 1 | 2 | 0 | 0 | 0 | 12 | 3 | 1 | 0 | 1 | 0 |
| Chase..... | 2 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| *Chautauqua..... | | | | | | | | | | | | |
| Cherokee..... | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 1 |
| Cheyenne..... | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Clark..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Clay..... | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Cloud..... | | | | | | | | | | | | |
| †Coffey..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Comanche..... | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Cowley..... | 2 | 2 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crawford..... | | | | | | | | | | | | |
| †Decatur..... | | | | | | | | | | | | |
| Dickinson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Doniphan..... | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 21 | 0 |
| Douglas..... | 0 | 0 | 0 | 0 | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Edwards..... | | | | | | | | | | | | |
| Elk..... | 1 | 1 | 1 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Ellis..... | | | | | | | | | | | | |
| †Ellsworth..... | | | | | | | | | | | | |
| †Finney..... | | | | | | | | | | | | |
| Ford..... | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 5 | 0 | 1 | 0 |
| Franklin..... | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geary..... | 1 | 1 | 0 | 0 | 12 | 0 | 3 | 0 | 0 | 0 | 1 | 0 |
| Gove..... | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Grant..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gray..... | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 17 | 0 |
| †Greene..... | | | | | | | | | | | | |
| Greenwood..... | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Hamilton..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Harper..... | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Harvey..... | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| †Haskell..... | | | | | | | | | | | | |
| †Hodgeman..... | | | | | | | | | | | | |
| Jackson..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Jefferson..... | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 |
| *Jewell..... | | | | | | | | | | | | |
| Johnson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 |
| Kearny..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Kingman..... | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kiowa..... | | | | | | | | | | | | |
| Labette..... | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 1 |
| Lane..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Leavenworth..... | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Lincoln..... | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Linn..... | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 |
| †Logan..... | | | | | | | | | | | | |
| Lyon..... | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 21 | 1 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Marion | 1 | 1 | 0 | 0 | 5 | 3 | 3 | 1 | 6 | 0 | 0 | 0 |
| Marshall | 2 | 2 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| McPherson | | | | | | | | | | | | |
| †Meade | | | | | | | | | | | | |
| *Miami | | | | | | | | | | | | |
| Mitchell | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montgomery | 0 | 0 | 6 | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| *Morris | | | | | | | | | | | | |
| †Morton | | | | | | | | | | | | |
| Nemaha | 1 | 1 | 4 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 331 | 1 |
| Neosho | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 0 |
| Norton | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 0 |
| Osage | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 0 |
| Osborne | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Ottawa | | | | | | | | | | | | |
| Pawnee | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 |
| Pratt | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 |
| *Rawlins | | | | | | | | | | | | |
| Republic | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Reno | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 11 | 0 | 2 | 0 |
| Rice | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Riley | 2 | 1 | 0 | 0 | 3 | 1 | 10 | 0 | 0 | 0 | 67 | 0 |
| Rooks | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Saline | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| †Scott | | | | | | | | | | | | |
| †Sedgwick | | | | | | | | | | | | |
| Seward | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Shawnee | 0 | 0 | 0 | 0 | 6 | 1 | 1 | 0 | 0 | 0 | 24 | 1 |
| Sheridan | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| Sherman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 |
| *Smith | | | | | | | | | 18 | 0 | 0 | 0 |
| Stafford | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| †Stanton | | | | | | | | | | | | |
| Stevens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Sumner | 2 | 2 | 0 | 0 | 6 | 0 | 10 | 0 | 1 | 0 | 0 | 0 |
| *Thomas | | | | | | | | | | | | |
| *Trego | | | | | | | | | | | | |
| Wabaunsee | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Wallace | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilson | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 1 |
| †Woodson | | | | | | | | | | | | |
| Wyandotte | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 |
| Cities: | | | | | | | | | | | | |
| *Atchison | | | | | | | | | | | | |
| Coffeyville | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 0 |
| Fort Scott | | | | | | | | | | | | |
| Kansas City | 17 | 14 | 17 | 3 | 5 | 1 | 1 | 1 | 4 | 0 | 24 | 0 |
| Leavenworth | 6 | 6 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 31 | 0 |
| Parsons | 5 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Topeka | 6 | 6 | 1 | 1 | 17 | 2 | 2 | 0 | 2 | 0 | 86 | 1 |
| Wichita | 0 | 0 | 0 | 0 | 8 | 2 | 11 | 3 | 13 | 0 | 0 | 0 |
| State Institutions, | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | 100 | 68 | 51 | 14 | 148 | 20 | 113 | 8 | 168 | 0 | 853 | 7 |
| For Feb., 1906 | 87 | 57 | 60 | 11 | 148 | 20 | 170 | 4 | 233 | 0 | 189 | 1 |

* No report.

† No contagious diseases in county.

‡ No health officer.

THE KANSAS PURE FOOD AND DRUGS LAW.**CHAPTER 266, LAWS OF 1907.**

AN ACT to prevent the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and to regulate traffic therein, and providing for the appointment of inspectors for carrying out its provisions, and to provide penalties for violation thereof, and to repeal all acts or parts of acts in conflict herewith.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. That it shall be unlawful for any person to manufacture within the state of Kansas any article of food or drugs, medicines or liquors which is adulterated or misbranded, or which contains any poisonous or deleterious substance, within the meaning of this act; and any person who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined not to exceed three hundred dollars, or be imprisoned one year in the county jail, in the discretion of the court, and for each subsequent offense, on conviction thereof, shall be fined not less than five hundred dollars, or be imprisoned for one year in the county jail, or shall receive both such fine and imprisonment, in the discretion of the court.

SEC. 2. That it shall be unlawful for any person to sell, keep for sale or offer for sale within the state of Kansas any article of food, drug or liquor which is adulterated or misbranded, within the meaning of this act, and any person who shall sell, keep for sale or offer for sale any article of food or drug or liquor which is adulterated or misbranded, within the meaning of this act, shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined in a sum not to exceed fifty dollars, or be imprisoned in the county jail not exceeding one year, or be both fined and imprisoned, in the discretion of the court.

SEC. 3. That the State Board of Health is authorized and directed to make and publish uniform rules and regulations not in conflict herewith, which rules and regulations shall be those adopted and promulgated by the United States Department of Agriculture in so far as they are applicable to and not in conflict with the provisions of this act, which rules and regulations shall include the collection and examination of specimens of foods, medicines, drugs, liquors and drinks manufactured, kept for sale, offered for sale or sold in the state of Kansas. Any person who shall violate any of the rules and regulations so made and published in the official state paper shall be deemed guilty of a misdemeanor, and on conviction shall be punished by a fine not exceeding fifty dollars, or imprisonment in the county jail not more than six months, or both, in the discretion of the court.

SEC. 4. That the examination of specimens of drugs shall be made at the University of Kansas, and such examinations shall be under the immediate supervision and direction of the dean of the school of pharmacy. That the examination of foods shall be made at the University of Kansas and the Kansas State Agricultural College, and such examinations shall be under the immediate supervision and direction of the directors of the departments of chemistry. That the University of Kansas and the Kansas State Agri-

cultural College shall employ such additional chemists and assistants as are necessary to properly and expeditiously analyze such drug and food products as are sent to them by the state food inspectors, for the purpose of determining from such examinations whether such articles are adulterated or misbranded, within the meaning of this act; and if it shall appear from any examination that any of such specimens is adulterated or misbranded, within the meaning of this act, the secretary of the State Board of Health shall at once certify the facts to the county attorney of the county in which such sample was taken, with a copy of the results of the analysis of the examination of such article, duly authenticated by the analyst or officer making such examination, under the oath of such analyst or officer.

SEC. 5. That it shall be the duty of each county attorney to whom the secretary of the State Board of Health shall report any violations of this act, or to whom any health officer of any county or city, or any other person, shall present satisfactory evidence of any such violation, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the state, without delay, for the enforcement of the provisions of this act. After judgment of the court, notice of such adulteration or misbranding shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

SEC. 6. That the term "drug," as used in this act, shall include all medicines and preparations recognized in the United States Pharmacopœia or National Formulary for internal or external use in force at the time the drug is prepared, sold, or offered for sale, and any substance or mixture of substances intended to be used for the cure, mitigation or prevention of disease of either man or other animals, whether simple, mixed, or compound. The term "food," as used herein, shall include all articles used for food or in the preparation of food, drink, confectionery or condiment by man, whether simple, mixed, or compound.

SEC. 7. That for the purpose of this act an article shall be deemed to be adulterated—

In case of drugs: *First*, if, when a drug is sold or dispensed under or by a name recognized in the United States Pharmacopœia or National Formulary, it differs in composition, or standard of strength, quality, or purity, recognized by the United States Pharmacopœia official at the time of sale or when dispensed, or if it differs in composition or standard from that recognized by the National Formulary. *Second*, if its strength or purity fall below the professed standard or quality under which it is sold.

In case of confectionery: If it contains terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredients deleterious or detrimental to health, or any vinous, malt or spirituous liquor or compound or narcotic drug.

In the case of food: *First*, if any substance has been mixed or packed with it so as to reduce or lower or injuriously affect its quality or strength. *Second*, if any substance has been substituted wholly or in part for the article. *Third*, if any valuable constituent of the article has been wholly or in part abstracted. *Fourth*, if it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed. *Fifth*, if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health; provided, that when in the

preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the cover of the package, the provisions of this act shall be construed as applying only when said products are ready for consumption. *Sixth*, if it consist in whole or in part of a filthy, decomposed, tainted or putrid animal or vegetable substance or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that had died otherwise than by slaughter.

SEC. 8. That the term "misbranded," as used herein, shall apply to all drugs, liquors, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substances contained therein, which shall be false or misleading in any particular, and to any food, liquor, or drug product which is falsely branded as to the state in which it is manufactured or produced. That for the purpose of this act an article shall also be deemed to be misbranded—

In case of drugs: *First*, if it be an imitation of or offered for sale under the name of another article. *Second*, if the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, phenacetin, acetanilid, or any derivative or preparation of any such substance, contained therein; provided, that drugs and medicines dispensed by or on the order of a physician's prescription, intended for immediate or temporary use, need not bear any statement on the package as to its contents.

In case of food: *First*, if it be an imitation of or offered for sale under the distinctive name of another article. *Second*, if it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis idica, chloral hydrate, phenacetin, acetanilid, or arsenic, or any derivative or preparation of any such substance, contained therein. *Third*, if in package form, and the contents are stated in terms of weight or measure, the net weight or measure is not plainly or correctly stated on the outside of the package. *Fourth*, if the package containing it or its label shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular.

Provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases: *First*, in the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accom-

panied on the same label or brand with a statement of the place where said article has been manufactured or produced. *Second*, in the case of articles labeled, branded or tagged so as to plainly indicate that they are compounds, imitations, or blends, and the word "compound," "imitation," or "blend," as the case may be, is plainly stated on the package in which it is offered for sale; provided, that the term "blend," as used herein, shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only; and provided further, that nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredients to disclose their trade formulas, except in so far as the provisions of this act may require to secure freedom from adulteration or misbranding.

SEC. 9. That no dealer shall be deemed guilty under the provisions of this act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer, or other party from whom he purchased such articles to the effect that the same is not adulterated or misbranded, within the meaning of this act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealer, and in such case said party or parties shall be amenable to the prosecutions, fines and other penalties which would attach in due course to the dealer under the provisions of this act; provided, that this exemption shall not apply when such dealer knew or ought to have known that such drugs, liquors or foods so sold, offered or kept for sale were adulterated or misbranded, within the meaning of this act.

SEC. 10. That the word "person," as used in this act, shall be construed to include both the plural and singular, as the case demands, and shall include corporations, companies, societies and associations. When construing and enforcing the provisions of this act, the act, omission or failure of any officer, agent or other person acting for or employed by any corporation, company, society, or association, within the scope of his employment or office, shall in every case be also deemed to be the act, omission, or failure of such corporation, company, society or association as well as that of the person.

SEC. 11. The State Board of Health shall appoint four food inspectors, one of whom shall be a practical dairyman, who shall each receive a salary of not to exceed one hundred dollars per month, and shall serve during the pleasure of the board; they shall be allowed the actual necessary expenses incurred in the performance of their duties, which shall be such as are prescribed by the rules of the State Board of Health as hereinbefore provided. The secretary of the State Board of Health, as executive officer of the board, shall direct the action of the food inspectors as such, and by reason of his office shall be chief food inspector; he shall receive a salary of twenty-five hundred dollars per annum, and such actual necessary expenses as are incurred in the performance of his duties as secretary of the State Board of Health and chief food inspector.

SEC. 12. That the secretary of the State Board of Health is authorized to confer and cooperate with the United States Department of Agriculture, in the enforcement of the national pure food law, as it may apply to food, liquor and drug products received in this state from other states, territories, or foreign countries.

SEC. 13. That for obtaining information regarding suspected violations of law, the chief food inspector or his duly appointed assistants shall have access to all places where any article of food or other article, the manufacture or sale of which is restricted, regulated or prohibited by this chapter, is stored or prepared for sale, or may be manufactured, kept for sale, or sold, and to places where food is or may be cooked, prepared, sold or kept for sale to or for the public, or distributed as a part of the compensation of servants and agents, including public and private hospitals, railroad camps, inns, boarding- and eating-houses, drinking-places, dining-cars, boats, and other places where any of said articles may be sold, and they may inspect any packages or receptacle found therein apparently containing any article of food or ingredient thereof, or any other article, the manufacture or sale of which is restricted, regulated or forbidden by this chapter, and may take samples therefrom for analysis, tendering payment therefor. Any person obstructing such entry or inspection, or failing upon request to assist therein, shall be guilty of a misdemeanor.

SEC. 14. That the standards of quality, purity and strength for food, liquors, drugs and drinks that have been or shall be adopted by the United States Department of Agriculture are hereby declared to be the standards of purity, quality and strength for foods, liquors, drugs and drinks in the state of Kansas, unless other standards are prescribed by the State Board of Health.

SEC. 15. That any person who shall violate any of the provisions of this act for which no other penalty is prescribed herein shall on conviction be fined in a sum not less than ten dollars nor more than one hundred dollars, or be imprisoned in the county jail not more than three months, or both such fine and imprisonment, in the discretion of the court.

SEC. 16. That all acts and parts of acts in conflict herewith are hereby repealed.

SEC. 17. That this act shall take effect and be in force from and after its publication in the official state paper.

Approved February 14, 1907.

Published February 16, 1907.

Rules and Regulations.

[OFFICIAL.]

At a meeting of the Kansas State Board of Health held March 7 and 8, the following rules and regulations for the enforcement of the pure food and pure drugs law were unanimously adopted :

E. W. Hoch, Governor :

TOPEKA, KAN., March 10, 1907.

SIR—In compliance with section 3 of Senate bill No. 20, Laws of 1907, the Kansas State Board of Health have formulated the following uniform rules and regulations for the enforcement of the food and drugs law, approved by you February 14, 1907, and herewith submit the same for your approval.

S. J. CRUMBINE, M. D.,

Secretary for the Board.

GENERAL.

REGULATION 1.—*Short title of act.*

The act "to prevent the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and to regulate traffic therein, and providing for the appointment of inspectors for carrying out its provisions, and to provide penalties for violation thereof, and to repeal all acts or parts of acts in conflict herewith," approved February 14, 1907, shall be known and referred to as *The Kansas Food and Drugs Law* of February 14, 1907.

REGULATION 2.—*Collection of samples.*

(Section 3.)

Samples of original packages or broken packages of food, drugs or liquors shall be collected only by authorized inspectors of the department of health, or by any state or local health officer of Kansas, or by any official analyst.

The term "original unbroken package," as used herein, is the original package, carton, case, can, box, barrel, bottle, phial or other receptacle put up by the manufacturer, to which the label is attached, or which may be suitable for the attachment of a label, making one complete package of the food or drug article. The original package contemplated includes both the wholesale and retail package.

Samples may be purchased in the open market, and, if in bulk, the marks, brands or tags upon the package, carton, container, wrapper or accompanying printed or written matter shall be noted. The collector shall also note the names of the vendor and agent through whom the sale was actually made, together with the date of purchase. The collector shall purchase representative samples.

A sample of a broken package shall be divided into three parts, and each part shall be labeled with the identifying marks. All samples shall be securely sealed by the collector. If the package be less than four pounds, or in volume less than two quarts, three packages of approximately the same size shall be purchased and the marks and tags upon each noted as above. One sample shall be delivered to the party from whom purchased, or to the party guaranteeing such merchandise, and two samples shall be sent to such food or drug analyst as may be designated by the State Board of Health, one of which shall be held under seal by the said food or drug analyst.

REGULATION 3.—*Analyses.*

(Section 4.)

(a) When the examination or analysis shows that the provisions of the Kansas food and drugs law of February 14, 1907, have been violated, notice of that fact, together with a copy of the findings, shall be furnished to the party or parties from whom the sample was obtained, or who executed the guaranty as provided in the food and drugs law of February 14, 1907.

(b) If it appears from examination or analysis that the provisions of the Kansas food and drugs law have been violated, the secretary of the State Board of Health shall give notice to the county attorney of the county where the sample was taken, as prescribed.

REGULATION 4.—*Publication.*

(Section 5.)

(a) When a judgment of the court shall have been rendered there may be a publication of the findings of the examiner or analyst, together with the findings of the court.

(b) This publication may be made in the form of circulars, notices, or bulletins, as the secretary of the State Board of Health may direct, not less than thirty days after judgment.

(c) If appeal be taken from the judgment of the court before such publication, notice of the appeal shall accompany the publication.

REGULATION 5.—*Standards for drugs.*

(Section 7.)

A drug bearing the name recognized in the United States Pharmacopœia or National Formulary shall be required to conform in strength, quality and purity to the standards prescribed or indicated for a drug of the same name recognized in the United States Pharmacopœia or National Formulary official at the time of sale or when dispensed; provided, that in case of homœopathic or eclectic drugs the same shall be required to conform to their accepted standards.

REGULATION 6.—*Formulas; proprietary foods.*(Section 8, *second in last paragraph.*)

(a) Manufacturers of proprietary foods are only required to state upon the label the names and percentages of the materials used, in so far as the secretary of the State Board of Health may find this to be necessary to secure freedom from adulteration and misbranding.

(b) The factories in which proprietary foods are made shall be open at all reasonable times to the inspection provided for in regulation 14.

REGULATION 7.—*Form of guaranty.*

(Section 9.)

(a) No dealer in food or drug products will be liable to prosecution if he can establish that the goods were sold, offered or kept for sale under a written guaranty by the wholesaler, manufacturer, jobber, dealer or other party residing in the United States from whom purchased; provided, that this exemption shall not apply when such dealer knew or ought to have known that said drugs or foods so sold, offered or kept for sale were adulterated or misbranded, within the meaning of the act, and the publication in the official publication of the State Board of Health, the BULLETIN OF THE KANSAS STATE BOARD OF HEALTH, of such drugs, liquors or foods as are adulterated or misbranded, within the meaning of the act, shall be deemed sufficient notice to dealers in the state of Kansas that such products are adulterated or misbranded.

(b) A general guaranty may be filed with the secretary of the State Board of Health by the manufacturer or dealer and be given a serial number, which number shall appear on each and every package of goods sold under such guaranty, with the words "Guaranteed under the Kansas Food and Drugs Law of February 14, 1907."

(c) The following form of guaranty is suggested:

I (*we*), the undersigned, do hereby guarantee that the articles of foods (*or drugs*) manufactured, packed, distributed or sold by me (*us*) [*specify*

ing the same as fully as possible], are not adulterated or misbranded, within the meaning of the Kansas food and drugs law of February 14, 1907.

(Sign in ink)

(Name and place of business of wholesaler, dealer, manufacturer, jobber, or other party.)

(d) If the guaranty be not filed with the secretary of the State Board of Health as above, it should identify and be attached to the bill of sale, invoice, bill of lading or other schedule giving the names and quantities of the articles sold. (See page 79.)

ADULTERATION.

REGULATION 8.—*Confectionery.*

(Section 7.)

(a) Mineral substances of all kinds (except as provided in regulation 13) are specifically forbidden in confectionery, whether they be poisonous or not.

(b) Only harmless colors or flavors shall be added to confectionery.

(c) The term "narcotic drugs" includes all the drugs mentioned in section 8, Kansas food and drugs law of February 14, 1907, relating to foods, their derivatives and preparations, and all other drugs of a narcotic nature.

REGULATION 9.—*Substances mixed and packed with foods.*

(Section 7, under "Food.")

No substance may be mixed or packed with a food product, or a product used in the preparation of food, which will reduce or lower its quality or strength. But under this provision may be employed substances properly used in the preparation of food products for clarification or refining, and eliminated in the further process of manufacture.

REGULATION 10.—*Coloring, powdering, coating, and staining.*

(Section 7, under "Food.")

(a) Only harmless colors may be used in food products; provided, that when used their presence shall be stated on the principal label, except in the case of butter, cheese, and confectionery. The use of artificial color in meat products is prohibited.

(b) The reduction of a substance to a powder to conceal inferiority in character is prohibited.

(c) The term "powdered" means the application of any powdered substance to the exterior portion of articles of food, or the reduction of a substance to a powder.

(d) The term "coated" means the application of any substance to the exterior portion of a food product.

(e) The term "stained" includes any change produced by the addition of any substance to the exterior portion of foods which in any way alters their natural tint.

REGULATION 11.—*Natural poisonous or deleterious ingredients.*

(Section 7, fifth under "Food.")

Any food product which contains naturally a poisonous or deleterious ingredient does not come within the provisions of the Kansas food and drug law of February 14, 1907, except when the presence of such ingredient is due to filth, putrescence, or decomposition.

REGULATION 12.—*External application of preservatives.*

(Section 7, fifth under "Food.")

(a) Poisonous or deleterious preservatives shall only be applied externally, and they and the food products shall be of a character which shall not

permit the permeation of any of the preservative to the interior, or any portion of the interior, of the product.

(b) When these products are ready for consumption, if any portion of the added preservative shall have penetrated the food product, then the proviso of section 7, paragraph 5, under "Foods," shall not obtain, and such food products shall then be subject to the regulations for food products in general.

(c) Paragraphs (a) and (b) are intended to cover or include all preservatives which are of such a character as to render the food products inedible until the preservative is removed.

REGULATION 13.—Wholesomeness of colors and preservatives.

(Section 7, *fifth* under "Food.")

Respecting the wholesomeness of colors, preservatives, and other substances which are added to foods, the Kansas State Board of Health may permit or prohibit such substances as the United States Department of Agriculture may designate as being wholesome or detrimental, as the case may be, and the names of those substances which are permitted or prohibited in food products shall be published in the BULLETIN OF THE KANSAS STATE BOARD OF HEALTH, but in case when a preservative is used in a food product, the name and quantity of the preservative shall be plainly stated on the principal label.

REGULATION 14.—Character of the raw materials.

(Section 7, *first* under "Drugs," *sixth* under "Food.")

The secretary of the State Board of Health, when he deems it necessary, shall examine, or cause to be examined, the raw materials used in the manufacture of food and drug products, and determine whether any filthy, decomposed or putrid substance is used in their preparation.

MISBRANDING.

REGULATION 15.—Label.

(Section 8.)

(a) The term "label" applies to any printed, pictorial or other matter upon or attached to any package of food or drug product, or any container thereof.

(b) The principal label shall consist, first, of all words which the Kansas food and drugs law of February 14, 1907, specifically requires, to wit: The name of the substance or product; the name of place of manufacture, in the case of food compounds or mixtures; words which show that the articles are compounds, mixtures, or blends; the words "compound," "mixture," or "blend," or words designating the substances or their derivatives and proportions required to be named in the case of drugs and foods. All these required words shall appear upon the principal label with no intervening descriptive or explanatory reading-matter. Second, if the name of the manufacturer and place of manufacture are given, they shall also appear upon the principal label. Third, elsewhere upon the principal label other matter may appear, in the discretion of the manufacturer.

(c) The principal label on foods or drugs for domestic commerce shall be printed in English (except as provided in regulation 17), with or without the foreign label, in the language of the country where the food or drug product is produced or manufactured. The size of the letters shall not be smaller than eight-point* [brevier] capitals; provided, that in case the size of the

*A point is $\frac{1}{72}$ of an inch. Type on this page is eight-point.

package will not permit the use of eight-point capitals the size of the letters may be reduced proportionately.

(d) The form, character and appearance of the labels, except as provided above, are left to the judgment of the manufacturer.

(e) Descriptive matter upon the label shall be free from any statement, design or device regarding the article or the ingredients or substances contained therein, or quality thereof, or place of origin, which is false or misleading in any particular.

(f) An article containing more than one food product or active medicinal agent is misbranded if named after a single constituent. In the case of drugs, the nomenclature employed by the United States Pharmacopœia and the National Formulary shall obtain, except as provided in regulation 5.

(g) The term "design" or "device" applies to pictorial matter of every description, and to abbreviations, characters or signs for weights, measures, or names of substances.

(h) The use of any false or misleading statement, design or device shall not be justified by any statement given as the opinion of an expert or other person, appearing on any part of the label, nor by any descriptive matter explaining the use of the false or misleading statement, design, or device.

(i) The regulation regarding the principal label will not be enforced until October 1, 1907, in the case of labels printed and now on hand, whenever any statement therein contained which is contrary to the Kansas food and drugs law of February 14, 1907, as to character of contents, shall be corrected by a supplemental label, stamp, or paster. All other labels now printed and on hand may be used without change until October 1, 1907.

REGULATION 16.—*Name and address of manufacturer.*

(Section 8.)

(a) The name of the manufacturer or producer, or the place where manufactured, except in case of mixtures and compounds having a distinctive name, need not be given upon the label, but if given must be the true name and the true place. The words "packed for ———," "distributed by ———," or some equivalent phrase, shall be added to the label, in case the name which appears upon the label is not that of the actual manufacturer or producer, or the name of the place not the actual place of manufacture or production.

(b) When a person, firm or corporation actually manufactures or produces an article of food or drug in two or more places, the actual place of manufacture or production of each particular package need not be stated on the label, except when, in the opinion of the secretary of the State Board of Health, the mention of any such place, to the exclusion of the others, misleads the public.

REGULATION 17.—*Character of name.*

(Section 8.)

(a) A simple or unmixed food or a drug product not bearing a distinctive name shall be designated by its common name in the English language; or, if a drug, by any name recognized in the United States Pharmacopœia or National Formulary. These regulations shall not be construed as requiring a statement of the proportion of alcohol or of the other ingredients of the United States Pharmacopœia or National Formulary preparations, except when sold in unbroken packages.

(b) The use of a geographical name shall not be permitted in connection with a food or drug product not manufactured or produced in that place, when such name indicates that the article was manufactured or produced in that place.

(c) The use of a geographical name in connection with a food or drug product will not be deemed a misbranding when by reason of long usage it has come to represent a generic term and is used to indicate a style, type, or brand; but in all such cases the state or territory where any such article is manufactured or produced shall be stated upon the principal label.

(d) A foreign name which is recognized as distinctive of a product of a foreign country shall not be used upon an article of domestic origin except as an indication of the type or style of quality or manufacture, and then only when so qualified that it cannot be offered for sale under the name of a foreign article.

REGULATION 18. — *Distinctive name.*

(Section 8.)

(a) A "distinctive name" is a trade, arbitrary or fancy name which clearly distinguishes a food product, mixture or compound from any other food product, mixture, or compound.

(b) A distinctive name shall not be one representing any single constituent of a mixture or compound.

(c) A distinctive name shall not misrepresent any property or quality of a mixture or compound.

(d) A distinctive name shall give no false indication of origin, character, or place of manufacture, nor lead the purchaser to suppose that it is any other food or drug product.

REGULATION 19. — *Compounds, imitations or blends without distinctive name.*

(Section 8.)

(a) The term "blend" applies to a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only.

(b) If any age be stated, it shall not be that of a single one of its constituents, but shall be the average of all constituents in their respective proportions.

(c) Coloring and flavoring cannot be used for the purpose of increasing the weight or bulk of a blend.

(d) In order that colors or flavors may not materially increase the volume or weight of a blend, they are not to be used in quantities exceeding 1 pound to 800 pounds of the blend.

(e) A color or flavor cannot be employed to imitate any natural product or any other product of a recognized name and quality.

(f) The term "imitation" applies to any mixture or compound which is a counterfeit or fraudulent simulation of any article of food or drug.

REGULATION 20. — *Articles without a label.*

(Section 8, first under "Drugs," second under "Food.")

It is prohibited to sell or offer or keep for sale a food or drug product bearing no label upon the package or no descriptive matter whatever connected with it, either by design, device, or otherwise, if said product be an imitation of or offered for sale under the name of another article.

REGULATION 21.—*Proper branding not a complete guaranty.*

Packages, although correctly branded as to character of contents, place of manufacture, name of manufacturer, or otherwise, may be adulterated, and if so are not entitled to be sold, offered or kept for sale.

REGULATION 22.—*Incompleteness of branding.*

A compound shall be deemed misbranded if the label be incomplete as to the statement of the ingredients required to be named. A simple product does not require any further statement than the name or distinctive name thereof, except as provided in regulations 17 and 26.

REGULATION 23.—*Substitution.*

(Sections 3, 7, and 8.)

(a) When a substance of a recognized quality commonly used in the preparation of a food or drug product is replaced by another substance not injurious or deleterious to health, the name of the substituted substance shall appear upon the label.

(b) When any substance other than that necessary to its manufacture or refining, which does not reduce, lower or injuriously affect its quality or strength, is added to a food product, the label shall bear a statement to that effect.

REGULATION 24.—*Waste materials.*

(Section 8.)

When an article is made up of refuse materials, fragments, or trimmings, the use of the names of the substances from which they are derived, unless accompanied by a statement to that effect, shall be deemed a misbranding. Packages of such materials may be labeled "pieces," "stems," "trimmings," or with some similar appellation.

REGULATION 25.—*Mixtures or compounds with distinctive names.*

(Section 8, *Proviso under "Food," first.*)

(a) The terms "mixtures" and "compounds" are interchangeable, and indicate the results of putting together two or more food products.

(b) These mixtures or compounds shall not be imitations of other articles, whether simple, mixed, or compound, or offered for sale under the name of other articles. They shall bear a distinctive name, and the name of the place where the mixture or compound has been manufactured or produced.

(c) If the name of the place be one which is found in different states, territories, or countries, the name of the state, territory, or country, as well as the name of the place, must be stated.

REGULATION 26.—*Substances named in drugs and foods.*

(Section 8, *second under "Drugs," second under "Food."*)

(a) The term "alcohol" is defined to mean common or ethyl alcohol. No other kind of alcohol is permissible in the manufacture of drugs, except as specified in the United States Pharmacopoeia or National Formulary.

(b) The names of all drugs noted in regulation 26, paragraph (c), and the quantities and proportions thereof, shall be printed in letters corresponding in size with those prescribed in regulation 15, paragraph (c).

(c) Except as provided in regulation 17, a drug or food product is misbranded in case it fails to bear a statement on the label of the quantity or proportion of any opium, morphine, heroin, cocaine, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, acetanilid, or phenacetin, or any derivative or preparation of any such substances, contained therein, and

in addition, in the case of drugs, alcohol and its derivatives, and in the case of foods, arsenic and its derivatives.

(d) A statement of the maximum quantity or proportion of any such substances present will meet the requirements, provided the maximum stated does not vary materially from the average quantity or proportion.

(e) In case the actual quantity or proportion is stated, it shall be the average quantity or proportion, with the variations noted in regulation 27.

(f) The following are among the principal derivatives and preparations made from the articles which are required to be named upon the label:

MORPHINE, alkaloid. *Derivatives*: Apomorphine, dionine, peronine, morphine acetate, hydrochloride, sulfate, and other salts of morphine. *Preparations* containing morphine or derivatives of morphine: Bougies, catarrh sauff, chlorodyne, compound powder of morphine, crayons, elixirs, granules, pills, solutions, sirups, suppositories, tablets, triturates, and troches.

OPIMUM, gum. *Preparations* of opium: Extracts, denarcotized opium, granulated opium, powdered opium, bougies, brown mixture, carminative mixtures, crayons, Dover's powders, elixirs, liniments, ointments, paregoric, pills, plasters, sirups, suppositories, tablets, tinctures, troches, vinegars, and wines. *Derivatives*: Codeine, alkaloid, hydrochlorid, phosphate, sulfate, and other salts of codeine. *Preparations* containing codeine or its salts: Elixirs, pills, sirups, and tablets.

COCAINE, alkaloid. *Derivatives*: Cocaine hydrochlorid, oleate and other salts. *Preparations* containing cocaine or salts of cocaine: Coca leaves, catarrh powders, elixirs, extracts, infusion of coca, ointments, paste pencils, pills, solutions, sirups, tablets, tinctures, troches, and wines.

HEROIN. *Preparations* containing heroin: Sirups, elixirs, pills, and tablets.

ALPHA and BETA EUGAINE. *Preparations*: Mixtures, ointments, powders, and solutions.

CHLOROFORM. *Preparations* containing chloroform: Chloranodyne, elixirs, emulsions, liniments, mixtures, spirits, and sirups.

CANNABIS INDICA. *Preparations* of cannabis indica: Corn remedies, extracts, mixtures, pills, powders, tablets, and tinctures.

CHLORAL HYDRATE (chloral, U. S. Phar., 1890). *Derivatives*: Chloral acetophenoxim, chloral alcoholate, chloralamide, chloralimide, chloral orthoform, chloralose, dormiol, hypnal, and uraline. *Preparations* containing chloral hydrate or its derivatives: Chloral camphorate, elixirs, liniments, mixtures, ointments, suppositories, sirups, and tablets.

ACETANILID (antifebrine, phenylacetamide). *Derivatives*: Acetphenetidine, citrophen, diacetanilid, lactophenin, methoxy-acetanilid, methyl-acetanilid, para-iodoacetanilid, and phenacetin. *Preparations* containing acetanilid or derivatives: Analgesics, antineuralgics, antirheumatics, cachets, capsules, cold remedies, elixirs, granular effervescing salts, headache powders, mixtures, pain remedies, pills, and tablets.

And, in addition, in case of drugs, **ALCOHOL**, ethyl (Cologne spirits, grain alcohol, rectified spirits, spirits, and spirits of wine). *Derivatives*: Aldehyde, ether, ethyl acetate, ethyl nitrite, and paraldehyde. *Preparations* containing alcohol: Bitters, brandies, cordials, elixirs, essences, fluid extracts, spirits, sirups, tinctures, tonics, whiskies, and wines.

And in case of foods, **ARSENIC** and its compounds.

REGULATION 27.—Statement of weight, measure, or quantity.

(Section 8, third under "Food.")

(a) If any statement of the weight, measure or quantity of the food contained in a package is printed, it shall be a plain and correct statement of the average net weight, measure, or quantity, and shall be placed either on or immediately above or below the principal label, and of the size of letters specified in Regulation 15.

(b) A reasonable variation from the stated weight, measure or quantity for individual packages is permissible, provided this variation is as often above as below the weight, measure or quantity stated. This variation shall be determined by the inspector or analyst from the changes in the humidity of the atmosphere, from the exposure of the package to evaporation or to absorption of water, and from the reasonable variations which attend the filling and weighing or measuring of a package.

REGULATION 28.—Method of stating quantity or proportion.

(Section 8.)

In the case of alcohol, the expression "quantity" or "proportion" shall mean the average percentage by volume in the finished product. In the case of the other ingredients required to be named upon the label, the expression "quantity" or "proportion" shall mean grains or minims per ounce or fluid ounce, and also, if desired, the metric equivalents therefor, or milligrams per gram or per cubic centimeter, or grams or cubic centimeters per kilogram or per liter; provided, that these articles shall not be deemed misbranded if the maximum of quantity or proportion be stated, as required in regulation 26 (d).

EXPORTS OF FOODS AND DRUGS.

REGULATION 29.—Preparation of food products for export.

(Sections 1 and 2.)

(a) Food products intended for export may contain added substances not intended for intrastate commerce, when the addition of such substances does not conflict with the laws of the countries to which the food products are to be exported, and when such substances are added in accordance with the directions of the foreign purchaser or agent.

(b) The exporter is not required to furnish evidence that goods have been prepared or packed in compliance with the laws of the foreign country to which said goods are intended to be shipped, but such shipment is made at his own risk.

(c) Food products for export under this regulation shall be kept separate and labeled to indicate that they are for export.

(d) If the products are not exported they shall not be allowed to enter intrastate commerce.

REGULATION 30.—Standards of purity, quality, and strength.

(Sections 8 and 14.)

When any article of food, liquor, drug or drink falls below the standards of quality, purity or strength which have been adopted or which shall be adopted by the United States Department of Agriculture or the Kansas State Board of Health, it shall be regarded as misbranded or adulterated, within the meaning of the Kansas food and drugs law of February 14, 1907.

REGULATION 81.—*Refrigerated undrawn poultry, game, and fish.*
(Section 7, sixth under "Food.")

The serving for food in any restaurant, hotel or dining-car in Kansas of any poultry, game or fish that has been refrigerated or kept in cold storage with the crop or entrails undrawn is prohibited.

REGULATION 82.—*Sanitation as affecting food or drugs.*

Every place where drugs, foods or food products are manufactured, prepared, stored, sold or offered for sale shall be required to be kept in a sanitary condition, and when the chief food inspector or his assistants, or any state or local health officer, shall find any such place in an unwholesome or unsanitary condition, he shall give the owner, agent or manager of such place a written notice to such effect, and any neglect or refusal to comply with such notice shall subject such person to the penalties provided in section 3.

REGULATION 83.—*Sidewalk displays.*

The sidewalk display of perishable products is prohibited unless such products are enclosed in a show-case or similar device, which will protect the same from flies, dust, or other contamination. Other food products that necessarily have to be peeled, pared or cooked before they are fit for consumption may be displayed on the sidewalk, provided that in such display the bottom of the container be at least eighteen inches above the surface of the sidewalk.

REGULATION 84.—*Label follows display products.*

When food products are taken from the original packages and exposed for sale, these food products shall be accompanied by a copy of the label of the original package, conspicuously displayed.

REGULATION 85.—*Label must not be destroyed.*

Labels on barrels, boxes, tubs, pails, casks or other packages must be so placed as not to endanger their mutilation or destruction in opening such packages. If packages are used from which goods are being sold or offered for sale or displayed, and from which the original label has been removed, destroyed, or rendered illegible, the goods contained therein will be considered misbranded within the meaning of the law.

REGULATION 86.—*Alterations and amendments of regulations.*

These regulations may be altered or amended at any time, without previous notice, by the Kansas State Board of Health.

The above rules and regulations are hereby adopted.

KANSAS STATE BOARD OF HEALTH.

Approved by the Board March 8, 1907.

Attest: S. J. CRUMBINE, M. D., *Secretary.*

“‘Mankind’ is an inclusive term
That takes in every human;
It must be so, for all men know
Mankind embraces woman.”

Undrawn Cold-storage Poultry.

From a Bulletin of the New York State Board of Health.

A few months ago the public press and medical journals gave quite a little space to the consideration of the question whether undrawn poultry that had been kept in cold storage for a number of months was an article fit for human food. While cold storage has not been shown to affect deleteriously the ordinary meats, sanitarians have contended that the flesh of poultry could not fail to be affected by the internal organs of the birds and the intestinal contents. Inasmuch as poultry is sold by weight, the storage men have desired to retain all that was weighable in the birds, and have contended that there was nothing objectionable to their storage with the crop full of the remnants of food and the intestines still containing stercoraceous material.

In June, 1906, Dr. Elmer M. Eckard, health commissioner of Peoria, Ill., determined to ascertain the actual effects of the cold storage of undrawn poultry, and commissioned a bacteriologist to purchase in the open market specimens of such articles offered for food and to make a thorough examination of the flesh and viscera. The following report, reprinted from the *Chicago Clinic*, is probably one of the first that has been issued of scientific investigations of the food value of undrawn cold-storage poultry:

GROSS CONDITION.

Two-pound broilers, after six months in cold storage—

Skin.—Wet and slimy, discolored in places, numerous abrasions from which is bubbling frothy fluid (the result of hydrogen peroxide bath to destroy odor, and freshen).

Odor.—Very disagreeable between thighs and wings and in region of the crop.

Flesh.—Pale; muscles flabby and readily torn.

Peritoneal cavity.—Contains about 5 c.c. of bloody fluid. The walls are discolored by contact with the intestines, gall-bladder, and fluid blood.

Liver.—Mushy; discolored in region of gall-bladder, and contains blood in a fluid state.

Intestines.—Filled with fecal matter and decomposed grain; walls are discolored (brown and greenish).

Crop.—Filled with corn, oats, and debris (manure, worms, etc.) Has odor of sour grain.

Lungs.—Partly filled with fluid blood (blood coagulates at death, and becomes fluid on decomposing.)

Weight.—Chickens that are bled and picked lose about fifteen ounces in the further preparation for cooking. Live chickens lose twenty to twenty-four ounces before ready to cook; this shows that there is about eight ounces lost by bleeding and picking.

CULTURE EXPERIMENTS.

Culture on agar—same bacteria flow from the intestinal cavity of chickens that have been in cold storage for six months as from recently killed chickens.

Cultures from liver muscles and peritoneal cavity of recently killed chickens are sterile.

Cultures from liver and peritoneal cavity of six months cold-storage chickens, undrawn, contain intestinal bacteria, although not in as large numbers as the intestinal cavities.

Cultures from muscles of cold-storage chickens were sterile.

Cultures from intestinal tract show numerous maggots.

Fluid from peritoneal cavity of recently killed chicken and emulsion of muscle of same, injected into peritoneal cavity of guinea-pig, produced no harmful results.

Fifteen drops of fluid from peritoneal cavity of undrawn cold-storage chicken injected into peritoneal cavity of guinea-pig caused severe symptoms, increased pulse, and rise of temperature, also looseness of bowels and loss of strength. Recovered after four days.

Fifteen drops of muscle emulsion of undrawn cold-storage chicken injected into the peritoneal cavity of guinea-pig caused symptoms as in other pig, but not so marked.

CONCLUSIONS.

Bacteria normally inhabiting the intestinal tract are not destroyed by cold storage, neither are the eggs of the blow-fly. These bacteria and maggots develop during the rise of temperature that takes place after removal from cold storage before they are killed by heat. The bacteria pass through the walls of the intestines into the peritoneal cavity and liver, while the poisons formed by the bacteria are more penetrative and pass deeper into the muscles. That these products of bacteria, called ptomaines, are poisonous is shown by their effect upon the guinea-pig, even in small amounts. These poisons are not destroyed by heat as are the bacteria, and produce the looseness of the bowels after eating this class of food. In large amounts, this poison results in

vomiting, severe intestinal pain, collapse, and even death. This is known as ptomaine poisoning, and for it there is no known antidote.

CHAPTER 187—LAWS OF 1907.

AN ACT to prohibit the sale of refrigerated undrawn, slaughtered poultry, game, and fish, and for the protection of slaughtered fresh meats, and providing penalties for violation thereof.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. That every person who shall offer or expose for sale at retail, for human food, at any public market, store, shop, or house, or in or about any street or other public place, any slaughtered domestic or wild fowls, rabbits, squirrels, or other small animals, wild or tame, that has been preserved by refrigeration or cold storage, unless the entrails, crops and other offensive parts are properly drawn and removed, shall be guilty of a misdemeanor, and upon conviction shall be subject to a fine of not less than fifty dollars nor more than one hundred dollars for each offense.

SEC. 2. That every dealer in slaughtered fresh meats, fish, fowl, or game, for human food, at wholesale or retail, at any established place, or as a pedler, in the transportation of such food from place to place to customers shall protect the same from dust, flies and other vermin or substance which may injuriously affect it, by securely covering it while being so transported. Every violation of this provision shall be a misdemeanor, punishable by a fine of not less than ten dollars or by imprisonment in the county jail for not less than ten days.

SEC. 3. This act shall be in force and effect from and after its publication in the official state paper.

Approved February 7, 1907.

Published February 9, 1907.

“If one has failed to reach the end he sought,
If out of effort no great good is wrought,
It is not failure, if the object be
The betterment of man; for all that he
Has done and suffered is but gain
To those who follow seeking to attain
The end he sought. His efforts they
Will find are guideposts on the way
To that accomplishment which he,
For some wise purpose, could not be
The factor in. There is a need
Of unsuccessful effort; 't is the seed
Whose mission is to lie beneath
The soil that grows the laurel wreath,
And he is not unworthy who
Falls struggling manfully to do
What must be done, in dire distress,
That others may obtain success.”

—Wm. J. Lampton, in “Success.”

Authority for Boards of Health to Remove Nuisances.

The attention of the county and municipal health officers is directed to the new nuisance law, herewith published, chapter 383, Laws of 1907. This new legislation gives state and local boards of health the necessary authority for the abatement of nuisances. Heretofore our authority has been largely of an advisory character.

It is urged that county health officers order a general cleaning up of their respective jurisdictions under this law, and that when such nuisances are found upon inspection to be prejudicial to the public health, the owner or occupant of the premises where found should receive a written notice ordering the abatement of such nuisances. This new law gives health officers and local boards of health all the necessary authority to have clean municipalities and counties. It is suggested that the law, with the order for the general cleaning up, be published in the official county paper under the signature of the local or county board of health, and that health officers follow such notice by a critical inspection of their respective jurisdictions, to see that the order is enforced and the law executed.

CHAPTER 383 — LAWS OF 1907.

AN ACT to empower state and local boards of health to inquire into and require removal of nuisances, and providing penalties for the violation of this act.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. The State Board of Health and the local boards of health shall have power and authority to examine into all nuisances, sources of filth and causes of sickness that may, in their opinion, be injurious to the health of the inhabitants, within any county or municipality in the state; and whenever any such nuisance, source of filth or cause of sickness shall be found to exist on any private property, or upon any watercourse in this state, the State Board of Health or local boards of health shall have the power and authority to order, in writing, the owner or occupant thereof, at his own expense, to remove the same within twenty-four hours, or within such reasonable time thereafter as such board may order; and if the owner or occupant shall neglect so to do, he shall, on conviction, be fined not less than ten nor more than one hundred dollars, and each day's continuance of such nuisance or source of filth or cause of sickness, after the owner or occupant thereof shall have been notified to remove same, shall be a separate offense.

SEC. 2. It shall be the duty of the county attorney of each county to prosecute any person who shall violate the provisions of this chapter.

SEC. 3. This act shall be in force and effect from and after its publication in the official state paper.

Approved February 28, 1907.

Published March 4, 1907.

The New Kansas Water and Sewage Law.

The attention of corporations, individuals and municipalities is directed, and notice is herewith given, that the provisions of the following law must be complied with within the time specified. Blanks for filing the required information will be furnished upon application to the secretary of the State Board of Health.

CHAPTER 382—LAWS OF 1907.

AN ACT to preserve the purity of the waters of the state, for the protection of the public health, prescribing duties of the State Board of Health in relation thereto, and providing penalties for the violation of the provisions herewith.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. That the term "waters of the state," wherever used in this act, shall include all streams and springs, and all bodies of surface and of impounded ground-water, whether natural or artificial, within the boundaries of the state.

SEC. 2. Every municipal corporation, private corporation, company and individual supplying or authorized to supply water to the public, within the state, shall, within sixty days after the passage of this act, file with the State Board of Health a certified copy of the plans and surveys of the water-works, with a description of the source from which the supply of water is derived; and no additional source of supply shall thereafter be used without a written permit from the State Board of Health, as hereinafter provided.

SEC. 3. No municipal corporation, private corporation, company or individual shall construct water-works for the supply of water to the public within the state, or extend the same, without a written permit, to be obtained from the State Board of Health, if in its judgment the proposed source of supply appears to be not prejudicial to the public health; provided, this shall not apply to the extension of water-mains for the distribution of water. The application for such permit must be accompanied by a certified copy of the plans and surveys for such water-works, or extension thereof, with a description of the source from which it is proposed to derive its supply; and no additional source of supply shall subsequently be used for any such water-works without a similar permit from the State Board of Health. When application shall be made for a permit under either of the above provisions of this section, it shall be the duty of the State Board of Health to proceed to examine the application without delay, and, as soon as possible, it shall make a decision, in writing; and, within thirty days after such decision, the corporation, company or individual making such application may appeal to the district court of the county, and said court shall, without delay, hear the appeal, and shall make an order approving, setting aside or modifying such decision, or fixing the terms upon which said permit shall be granted. The penalty for failure to file copies of plans, surveys and descriptions of existing water-works within the time hereinbefore fixed, and for the construction or extension of water-works, or the use of an additional source of supply, without a permit from the State Board of Health, shall be five hundred dollars, and further penalty of fifty dollars

per day for each day that the works are in operation contrary to the provisions of this act, recoverable by the state at the suit of the State Board of Health, as debts of like amount are recoverable by law.

SEC. 4. No person, company, corporation or municipality shall place, or permit to be placed, or discharge, or permit to flow into any of the waters of the state, any sewage, except as hereinafter provided. But this act shall not prevent the discharge of sewage from any public sewer system owned and maintained by a municipality or sewerage company, provided such sewer system was in operation and was discharging sewage into any waters of the state at the time of the passage of this act; but this exception shall not permit the discharge of sewage from the sewer system which shall be extended subsequent to the passage of this act. For the purpose of this act, sewage shall be defined as any substance that contains any of the waste products or excrementitious or other discharges from the bodies of human beings or animals.

SEC. 5. Upon application duly made to the State Board of Health, by sewerage companies or by the public authorities having by law the charge of the sewer system of any municipality, the governor of the state, the attorney-general and the secretary of the State Board of Health shall consider the case of such a sewer system, otherwise prohibited by this act, from discharging sewage into any of the waters of the state, and whenever it is their unanimous opinion that the general interests of the public health would be subserved thereby, the secretary of the State Board of Health may issue a permit for the discharge of sewage from any such sewer system into any of the waters of the state, and may stipulate in the permit the conditions on which such discharge may be permitted. Such permit, before being operative, shall be recorded in the office of the recorder of deeds for the county wherein the outlet of the said sewer system is located. Every such permit for the discharge of sewage from a sewer system shall be revocable, or subject to modification and change, by the State Board of Health, on due notice, after an investigation and hearing, and an opportunity for all interested therein to be heard thereon being served on the sewerage company or on the public authorities of the municipality owning, maintaining or using the sewage system. The length of time after receipt of the notice within which the discharge of sewage shall be discontinued may be stated in the permit, but in no case shall it be less than one year or exceed two years, and if the length of time is not specified in the permit it shall be one year. On the expiration of the period of time prescribed, after the service of a notice of revocation, modification, or change, from the State Board of Health, the right to discharge sewage into any of the waters of the state shall cease and terminate; and the prohibition of this act against such discharge shall be in full force, as though no permit had been granted, but a new permit may thereafter again be granted, as hereinbefore provided.

SEC. 6. It shall be the duty of sewerage companies and of the public-health authorities having by law charge of the sewer system of every municipality in the state from which sewage was being discharged into any of the waters of the state at the time of the passage of this act to file with the State Board of Health, within four months after the passage of this act, a report of such sewer system, which shall comprise such facts and information as the State Board of Health may require. No sewer system shall be

exempt from the provisions of this act against the discharge of sewage into the waters of the state for which a satisfactory report shall not be filed with the State Board of Health in accordance with this section.

SEC. 7. The penalty for the discharge of sewage from any public sewer system into any of the waters of this state without a duly issued permit, in any case in which a permit is required by this act, shall be five hundred dollars, and a further penalty of fifty dollars per day for each day the offense is maintained, recoverable by state at the suit of the State Board of Health as debts of like amount are recoverable by law. The penalty for the discharge of sewage from any public sewer system into any of the waters of the state without filing a report, in any case in which a report is required to be filed, shall be fifty dollars per day, recoverable by a like suit.

SEC. 8. All individuals, private corporations and companies that at the time of the passage of this act are discharging sewage into any of the waters of the state may continue to discharge such sewage unless, in the opinion of the State Board of Health, the discharge of such sewage may become injurious to the public health. If at any time the State Board of Health considers that the discharge of such sewage into any of the waters of the state may become injurious to the public health, it may order the discharge of such sewage discontinued.

SEC. 9. Every individual, private corporation or company shall discontinue the discharge of sewage into any of the waters of the state within ten days after having been so ordered by the State Board of Health.

SEC. 10. Any individual, private corporation or company that shall discharge sewage, or permit the same to flow, into the waters of the state contrary to the provisions of this act shall be deemed guilty of a misdemeanor, and shall upon conviction be punished by a fine of twenty-five dollars for each offense, and a further fine of five dollars a day for each day the offense is maintained, or by imprisonment not exceeding one month, or both, at the discretion of the court.

SEC. 11. Any order or decision, under this act, of the State Board of Health, or that of the governor, attorney-general, and secretary of the State Board of Health, shall be subject to an appeal to any district court of the county wherein the outlet of such sewer or sewer system, otherwise prohibited by this act, is situated; and said court shall have power to hear said appeal, and may affirm or set aside said order or decision, or modify the same, or otherwise fix the terms upon which permission shall be granted. But the order or decision appealed from shall not be superseded by the appeal, but shall stand until the order of the court, as above.

SEC. 12. All acts or parts of acts in conflict herewith are hereby repealed.

SEC. 13. This act shall take effect and be in force on and after its publication in the official state paper.

Approved March 13, 1907.

Published March 20, 1907.

“Solomon never said a wiser or a truer thing than this: ‘A merry heart doeth good like a medicine, but a broken spirit drieth the bones.’ That’s a good sentiment to print on a card and hang up where you can see it every day.”

Sewage Disposal.

From a Bulletin of the New York State Board of Health.

The very existence of a question of sewage disposal depends on the inherent selfishness of man. If every one, both individuals and communities, followed the golden rule, and decisively and consistently refused to do anything which could interfere with his neighbors' happiness or health, there would be no sewage-disposal question. Human nature, however, is essentially selfish, and as long as it is cheaper and easier for a farmer to build a privy over a stream than to dig a cesspool, or for a city to empty its outfall sewer directly into a river than to first purify the sewage, just so long will these methods continue to be employed regardless of the consequences, unless some higher power intervenes.

The above-mentioned practice is certainly revolting enough to deserve condemnation, and it is a startling evidence of man's selfishness that such things are done. But a municipal conscience is very small and feeble, and the plea of "did n't think" has no more effect than "don't care," after an epidemic has been started.

Of all the data which modern science has established, the fact that certain diseases are directly caused by impure drinking water is of the greatest importance and benefit. It is now a matter of common knowledge that vaccination prevents smallpox; that anti-toxin removes the dread of lockjaw and makes diphtheria curable; that consumption, not too far advanced, can be arrested; but that cancer and meningitis are still mysterious diseases. Typhoid fever and diarrheal disturbances are known to be among the list of water-borne diseases (that is, communicated by drinking water), and it is no exaggeration to say that, if all drinking water were pure, typhoid fever would be stamped out. The very thought of drinking sewage is nauseating. No one, knowingly, would drink from a brook which drained a barn-yard or a privy. The sight of a stream of drinking water winding in and out among piles of manure, no matter how clear and pure the water might appear, would turn any stomach, and only extreme thirst could make such water palatable. And yet typhoid fever is introduced into water in just such a way. Somewhere, somehow, some man, woman or child has acquired typhoid fever. The bowel discharges of the patient are thrown down a privy, into a barn-yard, onto the fields, into the sewer, or even directly in contact with food. The sewage is carried or is washed down to a stream, the water from which runs ultimately into a reservoir. Some city drinks the reservoir water and an epidemic en-

sues. The department of health, among its other duties, is charged with the task of preventing such an outrage.

There are two questions which suggest themselves when such a picture is presented:

1. Has the farmer the right to build a privy or have his barnyard where he pleases on his own land?
2. Will not the agency of typhoid be lost, or destroyed, in a stream after traveling a certain distance?

The first question can be answered definitely in the language of common law, that every man must so use his own property as not to injure or destroy the property of another. Not long ago John Mitchell, in making an appeal before President Roosevelt, said, with great emphasis, that he represented the claim of 2,000,000 people. The president instantly replied that he stood for the rights of 80,000,000 people. It is by this principle that the department can prevent one man from doing what will imperil thousands; so, no matter what a man or community does, if it tends to injure the health of other communities, the department, by its constitution, is bound to prevent such an abuse of private rights.

The second question cannot be so definitely answered. Severe epidemics have been caused by privies built over small streams, ten miles above a water-works intake. Cities like Cohoes, which take their drinking water from a river into which other cities have discharged sewage, invariably have a high death-rate from typhoid fever, even though the sewage discharge is many miles up stream. In the recent controversy between Chicago and St. Louis, experts testified that it was quite impossible for the typhoid germ to journey in the sewage from Chicago down-stream to the St. Louis water-works intake, a distance of over 200 miles. It is necessary for the department of health to adopt a safe policy, and when a city or village takes its water from a stream, it is incumbent on the department to see that all possible danger of infection from sewers, privies, cesspools or barn-yards is eliminated.

Fortunately, the dangerous elements in sewage can be entirely removed by a proper system of treatment, and it is evident that such a system ought to be, and must be, installed whenever a city discharges sewage into any stream subsequently used for drinking water. It is a pity that every community does not voluntarily assume this responsibility. In olden days no crime was so atrocious as that of poisoning wells, and even in times of war the moral sense of those heathen nations was sufficient to prevent such a

convenient way of destroying a nation's enemies. But in these days one city poisons another's water-supply without the least hesitation, and with little or no protest except from the state department of health. The duty of the department, however, is plain, and it remains for it to point out to each community the proper and most efficient means of removing the poisons from the sewage effluents.

Investigation of the Natural Water-supply of Kansas.

Under the tentative agreement between the United States Geological Survey and the Kansas State Board of Health, the work of investigating the natural waters of Kansas is now under way; daily samples are being collected and forwarded to the laboratories of the State University, at Lawrence, for analysis. Twenty-three stations are located, on the principal streams of the state. This department desires to express its appreciation of the work of the collectors, for it often happens these samples can only be taken by exposure to inclement weather and under trying conditions. The following is the list of stations with names of collectors:

| Stream. | Town. | Collector. |
|----------------------------|----------------------|---------------------------------------------|
| Arkansas river | Arkansas City | A. L. Newman. |
| Arkansas river | Deerfield | C. E. Gordon. |
| Arkansas river | Great Bend | M. L. Rohrbough. |
| Blue river | Manhattan | Ed. Markshaffel. |
| Cimarron river | Englewood | Col. C. D. Perry. |
| Cottonwood river | Emporia | John Hilton. |
| Chikaskia river | Argonia | E. McCann. |
| Grasshopper creek | Perry | C. G. Hart. |
| Marmaton river | Fort Scott | James Burton. |
| Medicine Lodge river | Kiowa | R. L. Van Duzen. |
| Neosho river | Emporia | Frank Bacon. |
| Neosho river | Oswego | Nelie Nafus. |
| Osage river | Boicourt | J. W. L. Gray. |
| Prairie Dog creek | Long Island | A. H. Mischke. |
| Republican river | Junction City | J. H. Rathert. |
| Sappa creek | Oberlin | C. S. Maddox. |
| Saline river | Sylvan Grove | Edward Buehring. |
| Smoky Hill river | Lindsborg | P. E. Gibson. |
| Solomon river | Beloit | A. T. Rogers. |
| Spring creek | Baxter Springs | Paul E. Mason. |
| Verdigris river | Coffeyville | D. M. Blair. |
| Walnut river | Winfield | Winfield Roller Mills and Elevator Company. |

Local boards of health or municipalities that have water problems of either a commercial or sanitary nature which they desire to have investigated should address the secretary of the State Board of Health, and such matters will receive the attention of Mr. Horatio N. Parker, representing the United States Geological Survey, and who has in charge the field-work of this investigation.

The Common Drinking-cup.

At the last meeting of the Public Health and Marine Hospital Service with the State Boards of Health, the common drinking-cup as found at fountains, schools, depots, and on railroad-trains, was condemned as a menace to the public health, and a unanimous expression recorded that it should be abolished. The fresh implantation of the germs of some loathsome or fatal disease on the rim of the drinking-cup, to be transferred to the lips of the next innocent user, is one of daily occurrence all over this country. Neither fancy nor imagination forms any part of the bold assertion that the common drinking-cup is one of the most fruitful sources for the propagation and spread of infectious and contagious diseases that exist in the present social order of things; diphtheria, tuberculosis, pneumonia, tonsilitis, common colds, la grippe, syphilis, are some of the diseases that may be transmitted in this way.

Dr. A. G. Young, of the Maine Board of Health, relates the following in the last issue of the Maine bulletin :

"A little while ago the writer of this was in a car with a woman who was coming home to die with consumption. She was returning from the Southwest, that *ignis fatuus* of hopeless cases. Her cough was distressing and her expectoration was profuse. Repeatedly and frequently her husband brought water to her in the tumbler which was under the ice-water faucet. An intelligent lady appreciated the danger to the two bright little children who accompanied her, and had her hands full in watching and guarding them from using the perilous tumbler. Once the little girl eluded her and drank from the glass just returned from the infected lips of the sick woman. Again, aboard a train, a child with a plentiful eruption of contagious impetigo upon the lips and face was freely using the common drinking-cup."

We raise our voice in protest against the continuance of the common drinking-cup. Travelers should provide themselves with individual cups; scholars should do their drinking at home; boards of education should provide sanitary drinking fountains whenever possible, and the railroads should provide the means for the distribution or sale of inexpensive paper cups to its patrons. Down with the common drinking-cup!

"There are microbes, so I see,
Germlets in a kiss;
Maybe so, but they must be
Bacilli of bliss."

A Few Desultory Remarks.

There seem to be a few who are resting under the misapprehension that this department was created and intended for the purpose of "advertising Kansas." For the purpose, therefore, of setting such aright, it is not inappropriate to make a statement of the scope and work of the State Board of Health as contemplated by law, and to outline its policy for the future.

Section 6659 defines the duties of the Board as follows: "The State Board of Health shall supervise the health interests of the people of this state. They shall make careful inquiry in respect to the cause of disease, and especially of epidemics, and investigate the sources of mortality, and the effects of localities, employments, conditions, *ingesta*, habits and surroundings of the health of the people."

Section 6661 provides for the appointment of committees or suitable persons to render special sanitary service, make practical and scientific investigations, etc., and report thereon.

The so-called publicity law, passed by the legislature of 1905, provides for the analysis of food products, and directs that such reports of analysis as are sent to the Board by the analysts shall be published quarterly. It would seem, therefore, that the intent of the legislature is clear: that the Board is charged primarily with the health interests of the people of the state, and that food and drug products that are adulterated or fraudulent shall be given publicity.

This department is essentially a department of disinfection, both for germs and frauds, as applied to food and drugs. Our rules for disinfection for the former are clearly defined in the Board's rules and regulations, and in the latter in the word "publicity," which we recognize as the greatest moral disinfectant known. It is presumed that our 1,800,000 citizens are entitled to the service of this department, and have a right to know of such things that are of importance to them. Therefore this department will be conducted in the future, as in the past, with a determination to do those things required by law, in a spirit of fairness and equity to all, regardless of threats, anonymous letters, or cartoons. If our BULLETIN contains an occasional giant firecracker or stick of dynamite, it will be because the case demands it and the law requires it.

"Nobody ever really knows how unless he does how."

An Addition to the Regulations.

After the fore part of this bulletin had been prepared for the press, the following addition to regulation No. 7 was added:

FILING GUARANTY.

In order that both the department and the manufacturer may be protected against fraud, it is requested that all guaranties of a general character filed with the secretary of the State Board of Health in harmony with regulation 7, rules and regulations for the enforcement of the food and drugs law, be acknowledged before a notary or other official authorized to affix a seal. Attention is called to the fact that when a general guaranty has been thus filed every package of articles of food and drugs put up under the guaranty should bear the legend, "Guaranteed under the Food and Drugs Law of February 14, 1907," and also the serial number assigned thereto, if the dealer is to receive the protection contemplated by the guaranty. No other word should go upon this legend or accompany it in any way. *Particular attention is called to the fact that nothing should be placed upon the label, or in any printed matter accompanying it, indicating that the guaranty is made by the Kansas State Board of Health.* The appearance of the serial number with the phrase above mentioned upon a label does not exempt it from inspection nor its guarantor from prosecution in case the article in question be found in any way to violate the food and drugs law of February 14, 1907.

It is my joy in life to find,
At every turning of the road,
The strong arm of a comrade kind,
To help me onward with my load.
And since I have no gold to give,
And love alone must make amends,
My only prayer is — while I live —
God, make me worthy of my friends.

— Frank D. Sherman.

So long as we love, we serve. So long as we are loved by others, I would almost say we are indispensable; and no one is useless while he has a friend. — R. L. Stevenson.

"The country is crowded with men who can do 'most anything'; it is searching for those who can do one thing well."

"Trouble has a way of waiting 'round till your resistance runs low and then striking you all of a heap."

"There are some things that you ought to forget, but should try to remember them opportunely."

"Being able to laugh over trouble is the same thing as being able to have no trouble."

"Disregarding your own troubles shuts out envy for the good fortune of others."

Doing good is the only certainly happy action of a man's life. — Phillip Sidney.

VITAL STATISTICS

Reported to the Kansas Board of Health for March, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| The State..... | 76 | 52 | 28 | 9 | 106 | 13 | 81 | 3 | 273 | 3 | 1856 | 8 |
| March, 1906..... | 103 | 77 | 61 | 15 | 106 | 18 | 192 | 9 | 263 | 0 | 231 | 7 |
| Allen..... | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Anderson..... | | | | | | | | | | | | |
| Atchison..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Barber..... | | | | | | | | | | | | |
| Barton..... | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 0 | 2 | 0 |
| Bourbon..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 25 | 0 |
| Brown..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Butler..... | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 8 | 0 |
| Chase..... | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 6 | 0 |
| *Chautauqua..... | | | | | | | | | | | | |
| Cherokee..... | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cheyenne..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Clark..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 |
| Clay..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Cloud..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Coffey..... | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Comanche..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Cowley..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Crawford..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Decatur..... | | | | | | | | | | | | |
| *Dickinson..... | | | | | | | | | | | | |
| Doniphan..... | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Douglas..... | 0 | 0 | 1 | 0 | 3 | 2 | 1 | 0 | 6 | 0 | 30 | 0 |
| Edwards..... | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| Elk..... | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Ellis..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 |
| Ellsworth..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Finney..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| †Ford..... | | | | | | | | | | | | |
| Franklin..... | 5 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Geary..... | 0 | 0 | 0 | 0 | 12 | 0 | 5 | 0 | 0 | 0 | 3 | 0 |
| Gove..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Graham..... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| †Grant..... | | | | | | | | | | | | |
| Gray..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 |
| *Greeley..... | | | | | | | | | | | | |
| Greenwood..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 2 | 15 | 0 |
| Hamilton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Harper..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 |
| Harvey..... | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Haskell..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Hodgeman..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Jackson..... | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 |
| Jefferson..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| *Jewell..... | | | | | | | | | | | | |
| Johnson..... | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Kearny..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 21 | 0 |
| Kingman..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Kiowa..... | | | | | | | | | | | | |
| Labette..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Lane..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Leavenworth..... | | | | | | | | | | | | |
| Lincoln..... | 2 | 2 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 |
| Linn..... | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| †Logan..... | | | | | | | | | | | | |
| Lyon..... | 2 | 2 | 2 | 0 | 5 | 0 | 0 | 0 | 4 | 0 | 47 | 0 |
| Marion..... | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 2 | 0 | 0 | 0 |
| Marshall..... | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 40 | 0 |
| *McPherson..... | | | | | | | | | | | | |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|--------------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| † Meade | | | | | | | | | | | | |
| * Miami | | | | | | | | | | | | |
| Mitchell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Montgomery | 1 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 3 | 0 | 1 | 0 |
| * Morris | | | | | | | | | | | | |
| * Morton | | | | | | | | | | | | |
| Nemaha | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 178 | 0 |
| * Neosho | | | | | | | | | | | | |
| Ness | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| * Norton | | | | | | | | | | | | |
| Osage | 3 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osborne | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| * Ottawa | | | | | | | | | | | | |
| Pawnee | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 35 | 0 |
| Phillips | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Pottawatomie | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | 0 |
| Pratt | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 0 | 0 | 0 | 12 | 0 |
| Rawlins | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Republic | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reno | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 |
| Rice | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 0 |
| * Riley | | | | | | | | | | | | |
| Rooks | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 6 | 2 |
| Saline | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 1 | 0 | 0 |
| Scott | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| * Sedgwick | | | | | | | | | | | | |
| Seward | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Shawnee | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 0 | 3 | 0 | 21 | 0 |
| Sheridan | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 15 | 0 | 0 | 0 |
| Sherman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| * Smith | | | | | | | | | | | | |
| Stafford | 0 | 0 | 0 | 0 | 4 | 2 | 1 | 0 | 8 | 0 | 0 | 0 |
| † Stanton | | | | | | | | | | | | |
| Stevens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Sumner | 1 | 1 | 0 | 0 | 2 | 0 | 15 | 2 | 0 | 0 | 1 | 0 |
| Thomas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 1 | 0 |
| Trego | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 |
| Wabaunsee | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Wallace | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Wichita | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilson | 2 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 5 | 0 | 78 | 0 |
| Woodson | 3 | 3 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte | 1 | 1 | 1 | 0 | 9 | 0 | 0 | 0 | 2 | 0 | 26 | 2 |
| Cities: | | | | | | | | | | | | |
| * Atchison | | | | | | | | | | | | |
| Coffeyville | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 27 | 0 | 0 | 0 |
| Kansas City | 11 | 11 | 3 | 3 | 5 | 0 | 0 | 0 | 1 | 0 | 223 | 2 |
| Leavenworth | 1 | 1 | 3 | 1 | 4 | 0 | 1 | 0 | 1 | 0 | 70 | 0 |
| Parsons | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Topeka | 3 | 3 | 1 | 0 | 9 | 1 | 2 | 0 | 12 | 0 | 229 | 2 |
| Wichita | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 63 | 0 | 5 | 0 |
| State Institutions | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

TYPICAL LIFE-HISTORY OF THE FLY.

(*Musca domestica*.)

This insect, known as the common house-fly, is found all over the world. It lays its eggs by preference in horse manure, but in the absence of this substance will oviposit and breed in other excrementitious matter, and will lay its eggs in decaying vegetables. It is difficult and often impossible to rear it from cow dung. In horse manure, however, it flourishes. The eggs are laid freely on horse manure in an undisturbed condition. These eggs are elongate, white, and hatch very soon after being laid—in six or eight hours. The larvæ, which are white, pointed maggots, grow rapidly, cast their skin twice, and reach full growth, under favorable conditions, in four or five days. The outer skin then hardens, swells out, turns dark brown in color, and within it the true pupa is formed. In this stage it may live for five days, and the adult fly issues at the expiration of this time through a round hole in the anterior end of the pupal covering. This makes the total life round for a single generation in summer approximately ten days. Thus there is abundance of time for the development of from twelve to fifteen generations in the climate of Kansas every summer.

The number of eggs laid by an individual fly averages about 120, and the enormous numbers in which the insect occurs is thus plainly accounted for, especially when we consider the abundance and universal occurrence of appropriate larval food. The universal occurrence of uncared-for piles of horse manure in cities is therefore not only a source of great discomfort, but is inimical to health, since the house-fly undoubtedly distributes disease germs. The numbers in which house-fly larvæ occur in horse-manure piles may be understood when the statement is made that from a quarter of a pound of manure from the center of a pile, 160 larvæ and 146 puparia of the house-fly have been taken. This would make about 1200 house-flies to the pound of manure. This is not a fair average, but indicates possibilities, and is an actual record of an individual case. Experiments conducted at Washington indicate that by cleanly measures in stables, by the daily collection of the manure and placing it in a closed pit or closet or by treating it at intervals of a week with chlorid of lime, the house-fly nuisance can be greatly abated, and thus the disease danger largely avoided.

There is a general impression that house-flies sometimes bite

people, but this is entirely wrong. Its mouth parts are fitted for sucking and lapping-up liquids, and not for piercing. The stable fly is, however, a biting one, and it looks so much like a house-fly that one almost has to let it bite before finding out whether it is a house-fly or not. The stable fly is seldom found in houses except just before a rain, and then it comes in at the open windows or doors, if not screened. From this fact arises the old saying, "Flies begin to bite before a rain." It has been asked why flies seem to prefer windows and looking-glasses, but the answer is simple enough. When they are on the windows they want to get out; when they are on looking-glasses they are mistaking them for windows.

Sometimes, when a house-fly is examined, it will be seen to be fairly covered with little reddish objects, which are really living creatures. They are parasitic mites which attach themselves to the bodies of house-flies and certain other insects and, inserting their long beaks, suck their juices. It is comforting to think that the house-fly has these parasites which torment him so. Is n't it? Such retribution is just. And there is another comforting fact. House-flies die of fungous diseases. Sometimes, especially in the fall, flies will be found behind the picture-frames or in rather dark places covered with a gray, fur-like substance, which is the manifestation of the fungous disease which has killed it. Then, too, dead flies will be seen with their bodies swollen and appearing more or less striped. These also have been killed by another fungous disease. These epidemic diseases cease in December, and although many thousands of house-flies are killed by them, the remarkable rapidity of development in the early summer months soon more than replaces the thousands thus destroyed.

If we could only get our boards of health in cities and counties to attack the house-fly question, and to insist on the proper disposal and treatment of horse manure, the insect would soon become scarce; and perhaps its agency in the spread of disease will induce these officials to look into the matter. It is a noticeable fact that horses are very much on the decrease in cities; the motor vehicles of different kinds are becoming multiplied, and with this change will come a decrease, and a marked one, in the number of house-flies. In the country and in agricultural communities there is not much hope in the near future except through better knowledge on the part of the inhabitants and an effort to do away with the breeding-places of this nuisance.

The above facts are the basis for rule XI, adopted by the State Board of Health at the September meeting, 1906, viz.:

RULE XI. *Stables to be kept clean.* All stables and stable-yards shall be kept clean. Inasmuch as the manure pile is the favorite breeding-place of the common house-fly, it is ordered that between the 1st of May and the 1st of November not more than one wagon-load of manure at any private stable nor more than two wagon-loads at any livery or hotel stable shall be allowed to accumulate in or near the same at one time. When necessary to remove such manure from off the premises, as aforesaid, it should be done in such a manner as to be least offensive, so that none of it may be dropped or left in any street, lane, road, or passageway.

"An ounce of prevention is worth a pound of cure"; or, expressed in flies, the destruction of one manure pile is equal to putting about 1,000,000 flies out of business.

MORAL.—Now is the time for spring barn-yard cleaning. **GET BUSY!**

To County and Municipal Health Officers:

As the manure heap is the favorite breeding-place of the fly, you should issue an order to have every manure or refuse heap cleaned up and scattered or destroyed at once. The contents of open privy-vaults should be removed and buried, and the vaults thoroughly limed. These orders can be enforced under the new nuisance law passed by the last legislature, which law appeared in the March BULLETIN. This order should be published in your official county paper, and a diligent crusade started for its enforcement, under penalties of the law.

FLIES.

(Apologies to Eugene Field.)

See the fly.

It has not always been a fly—it used to be a maggot.

The children of flies are maggots till they get grown, then they are flies.

Maggots live in manure and eat manure to grow up and be flies. They rather be flies than maggots.

Flies eat manure, too.

But they eat a lot of other things that we would n't eat.

They eat the stuff a man coughs up when he has consumption.

That is what they go to the spittoon for.

Then the fly-specks have the germs of consumption in them.

When flies come out of the spittoons they rub their fore feet to-

gether and then rub them on their heads. That is the way they wash.

Nice, clean flies.

Have one in your coffee?

Flies like open closets, because that is where they lunch.

But they will leave the privy any time to get in your mouth when taking your midday nap.

When you shoo them away from typhoid stools they get on baby's bottle.

Then we wonder how baby got typhoid fever.

Flies are opposed to sewers.

They think it is a trick to starve them out.

Then they have to live on such scrapings as they can get—the vomit of drunk men, sores on dogs and horses, and the cold meat in the pantry that is saved for supper.

Flies have one eternal enemy—the housewife.

What would she think if you were to screen your house and help her to get rid of them?

—*Florida Health Notes.*

A MOVING PICTURE.

Place.—Sidewalk display of food products.

Time.—Midsummer.

Personnel.—Flies, pedestrians, customers, etc.

ACT I. Two swarms of flies are breakfasting on a bright summer morning on two delectable dishes in front of the grocer's store—one is a fresh pile of horse droppings; the other a generous expectoration of tuberculous sputum just deposited by a gentleman who has recently "come West for his health." Several pedestrians pass, which alarms the aforesaid flies, and they immediately arise, to settle back on the first thing to attract their attention, which seems to be the attractive food products just put out on the sidewalk by the grocer, and, with legs, wings and mouth reeking with filth and tubercular germs, they voraciously attack their second course.

ACT II. Infected food eaten by man who was "run down" by a "bad cold."

ACT III. Another *case* of tuberculosis reported to the department of health.

ACT IV. Another *death* from tuberculosis reported to the department of health.

CURTAIN.

KANSAS FOOD AND DRUGS LAW CATECHISM.

Following are some of the questions that have been submitted to this department through correspondence or at the public meetings or so-called schools of instruction held in different parts of the state thus far. They are herewith published, with their replies, in order that they may be a guide to dealers and other interested parties:

Ques. What are the requirements on baking-powder? Is it necessary that the formula be on the can?

Ans. The rules require that the names of the constituents of baking-powder be placed upon the principal label of each can.

Q. How are grocers to know what old goods should be thrown out?

A. This department does not require any goods to be thrown out except those that are deleterious or unwholesome by reason of containing poisonous compounds or that have undergone fermentation or decay. Goods that are technically illegal by reason of improper labels are permitted to be sold until October 1, 1907, after which time they will be required to have new labels complying with the law, if sold, kept for sale or offered for sale thereafter.

Q. Can butter be colored by farmers or creameries legally.

A. Yes, if they do not use unwholesome colors.

Q. Can saltpeter be used in curing hams and meat?

A. Yes. The United States Department of Agriculture defines the following legal preservatives: "Salt, sugar, vinegar, spices, smoke, oils, alcohol, and, until further notice, saltpeter." It should be noted the suggestive manner in which the department permits the use of saltpeter, for the time being.

Q. What is the law on undrawn poultry, rabbits, and game?

A. The last legislature passed a law prohibiting the sale at retail of undrawn poultry, game and other small animals if the same had been kept by refrigeration or in cold storage with the entrails or crops undrawn. Regulation 31 forbids the serving of such products for food in any restaurant, hotel, or dining-car.

Q. Is a retailer subject to the provisions of the pure food law if he can establish a guaranty from the wholesaler?

A. A retailer may not be subject to the provisions of the Kansas food and drugs law if the products bought from the wholesaler have been guaranteed in the proper way under the Kansas food and drugs law.

Q. What protection does the federal law afford the public in

the state without a state law against fraudulent goods made and sold within such state?

A. None whatever.

Q. Some of the flouring-mills brand a second-grade flour as high patent flour. Is that in accordance with the law?

A. I should say it is not.

Q. Is it allowed to sell articles like cheese, dried fruit, etc., at their marked weight, when they show a natural reasonable shrinkage?

A. Regulation 27 permits a variation in weight or measure which might be due to a natural reasonable shrinkage, by evaporation of moisture or any other natural cause.

Q. Is saccharin ever permitted as a sweetener or preservative?

A. Saccharin is prohibited in all food products in Kansas: *First*, because it is a substitute for a wholesome product of real food value, and is therefore illegal. *Second*, it is fraudulent in that it makes the product appear better than it really is. *Third*, there are reasonable grounds for presuming that it is unwholesome in any considerable quantities or where continuously taken.

Q. Is the sale of an alum baking-powder prohibited?

A. No; if the ingredients of the powder are stated on the label.

Q. Can peas, beans, etc., stating that the contents are colored with sulfate of copper, be sold?

A. The sale of food products colored with sulfate of copper is positively prohibited.

Q. How will you govern or control parties peddling extracts and other food products through the country?

A. Our inspectors have special instructions to watch for and inspect all such peddlers or vendors of foods or drugs, and they will be subject to the same requirements of the law as any other dealer.

Q. Why do you require bottlers to state on the labels that a color is added, and not on cheese, butter, and confectionery?

A. Because the national government exempts those three articles by law, and as our rules and regulations are framed to follow after the national law, we, too, have exempted them.

Q. Do you class drinks as a food?

A. Yes.

Q. What is the proper label for a so-called vanilla extract which contains no vanilla bean?

A. "Imitation vanilla flavor," would probably be a proper label.

Q. Is there a state baking-powder law, and, if so, what are its requirements?

A. There is no special law governing baking-powders. Under the Kansas food and drugs law, articles that enter into the preparation of food are defined as foods; therefore baking-powders, extracts, spices and all condiments are classed as food products, and are under the same requirements as to labels.

Q. What are the standards of requirement for ice-cream?

A. Straight ice-cream must contain at least fourteen per cent. milk-fat in the finished product. Fruit and nut ice-cream must contain at least twelve per cent. of milk-fat. The use of unwholesome or deleterious products and preservatives is prohibited.

Q. Can home-made cider vinegar that is below the required strength, and to which is added a sufficient quantity of distilled or spirit vinegar to bring it up to the required standard of strength, be labeled cider vinegar?

A. No; under the law, cider vinegar must be wholly and entirely the product of apples.

Q. Can a malt or spirit vinegar be labeled "Jeniton" or "Willow Twig" brand vinegar?

A. No; the use of any word, design or device which is false or misleading in any particular is prohibited. The word "Jeniton" or "Willow Twig" is misleading, as indicating that the product was made from apples of that name.

S. J. CRUMBINE, M. D.,
Chief Food and Drugs Inspector.

LIFE CYCLE OF YELLOW FEVER MOSQUITO.

Public Health Reports.

Stegomyia calopus adopted as the official name for the yellow fever mosquito.

The following statement has been furnished by Ch. W. Stiles, chief of the division of zoology, hygienic laboratory:

Prof. R. Blanchard, president of the International Commission of Zoological Nomenclature, has recently shown that, according to the international rules, the name *Stegomyia fasciata*, commonly used for the yellow fever mosquito, should be changed to *Stegomyia calopus*. The reasons for this change are as follows:

Culex fasciatus was first used in 1789 and later in 1804, for a mosquito which is not identical with the yellow fever mosquito. In 1805, this name was first used for the yellow fever mosquito, but improperly so, because of its use in 1789 and 1804 for a different species.

Culex calopus Meigen, 1818, is the first name properly proposed for the yellow fever mosquito, and this upon transfer to the genus *Stegomyia* becomes *Stegomyia calopus* (Meigen, 1818; Blanchard, 1905).

NOTE.—The name *Stegomyia calopus*, instead of *Stegomyia fasciata*, will be hereafter used in the public health reports in designating the yellow fever mosquito. The bureau of entomology, Department of Agriculture, has also adopted the name *Stegomyia calopus*.

Observations on the life cycle of Stegomyia calopus.

The following observations made at Mobile, on the life cycle of *Stegomyia calopus*, cover one year of study:

April 13, 1906. I found in a house yard a metal tank containing eight inches of rain-water in which were several hundred larvæ, which I took away with me and which developed into adult mosquitoes.

During May, June, July, August, September, October and November the larvæ were found throughout the city without difficulty in the water containers in the yards.

December 23, 1906. On the horse trough there was a layer of ice three-sixteenths inch in thickness. The water in two tubs under a neighboring shed was not frozen, and I removed from them larvæ, which developed at room temperature into adult mosquitoes.

December 24, 1906. Ice on the horse trough one-half inch thick.

January 6, 1907. Seventeen larvæ found in the saucer of a flower-pot in a living-room of the hospital. These larvæ, which were large and healthy, were placed in a jar in the ice-box in a compartment under the ice where the temperature was about 50 degrees. They were supplied with food. At the end of twelve days all were dead, none of them having passed the larval stage.

January 16, 1907. Found plenty of larvæ in three rain barrels. Found larvæ in black jug.

January 18, 1907. Larvæ found in rain barrel.

January 19, 1907. Larvæ found in three kegs, one tub, and two barrels, all of which contained rain-water.

During February I found no larvæ, but Dr. R. H. Peters, formerly acting assistant surgeon, reported to me that he found them in rain barrels. In February I hatched out eggs which had remained dry for six and one-half months.

March 17 Doctor Peters brought me a bottle of larvæ which he collected from a barrel.

The above observations cover a year's investigation, and during

each month of the twelve just passed there were found in rain barrels in Mobile the larvæ which developed into adult mosquitoes.

In this connection, I wish to report that the larvæ were found in fifteen instances in brown jugs standing in the yards.

The larvæ were never found breeding in the unpaved street gutters or ponds, or, in fact, in any natural-earth bottoms, but were always in artificial water containers.

The following experimental data are submitted to show that the eggs may remain viable for six and one-half months when kept dry :

Eggs were laid on the surface of the water in a jar on August 16, 1906. The jar was then tilted so that the eggs were left on the sides of the jar, above the level of the water. The jar was then set aside in a wardrobe in a room which had no fire in it all winter and the doors and windows were open day and night.

On October 15 I scraped off some of the eggs, put them in water, and in sixteen hours they had hatched; the larvæ developed into adult mosquitoes.

On February 27, 1907, I added enough water to the jar to cover the eggs and raised it to a temperature of 80 degrees; seventeen hours later two dozen larvæ had hatched; later in the day another dozen had hatched.

March 6: 9 pupæ.

March 7: 16 pupæ.

March 8: 10 adults.

March 11: 16 males dead on surface of water; 5 females fed on blood; 16 females alive; 4 males alive.

March 12: 10 fed blood.

March 13: 3 fed blood.

March 14: 50 eggs laid.

March 15: 50 eggs laid.

March 16: 7 females and 2 males alive.

March 17: 1 fed blood.

March 18: 4 fed blood.

March 19: 2 fed blood.

March 20: 6 females and 2 males alive; about 100 larvæ in jar; 100 eggs removed from surface of water and dried on paper.

March 23: 1 fed blood; 115 eggs removed and dried on paper.

This experiment shows that the eggs which were kept dry at practically outdoor temperature from August 16 to February 27 were still viable, and when covered with water and kept at 80 degrees, developed by March 8 into adults which on March 14 laid eggs which hatched into about 100 larvæ on March 20, thus completing the life cycle.

Eggs which are now being dried will be tested for viability one year hence.

AN OBJECT-LESSON.

People rarely get vaccinated except when they have to, either on account of the actual presence of smallpox, or on account of some law or regulation requiring it. And as a rule ordinances requiring vaccination are not passed except in the presence of smallpox, and then, as soon as the actual danger is over, the regulations fall into innocuous desuetude. So, after all, in its last analysis, the actual practice of vaccination depends almost exclusively on the actual presence of smallpox. School boards will enforce vaccination while smallpox is in the community, but as soon as the immediate danger is passed, then the practice is no longer carried out. As a result of this, those communities that have had more or less smallpox for several years in succession are very nearly immune, some people having had the disease and acquired immunity that way; others having been vaccinated and acquired immunity that way. In such a community smallpox will die out, because there is nothing for it to feed upon. When it dies out, vaccination stops, and children grow up unvaccinated, and, in a few years, most people are susceptible to smallpox again. And in a few years smallpox gets introduced again. And then it spreads like fire in a forest, because most people are susceptible to it. Then it is that people fall over one another getting vaccinated, but not until many lives are lost and many people disfigured for life.

Cleveland, Ohio, has a population larger than ten of the largest cities in Florida combined. After many years with little or no smallpox, and consequently very little vaccination, when the population was nearly all susceptible to the disease, suddenly, and without warning, this loathsome malady gained entrance into the city. In 1898 there were 48 cases of smallpox and no deaths. The disease was just introduced. In 1899 there were 475 cases and 3 deaths. It was getting pretty fair anchorage. In 1900 there were 993 cases and 16 deaths. People said it was mild. In 1901 there were 1230 cases and 20 deaths. It was still mild. In 1902 there were 1298 cases and 224 deaths. Horror of horrors! The people opened their eyes. The health officer was opposed to vaccination. He had disinfected and disinfected, he had quarantined and quarantined, and the epidemic had increased. It had escaped all bounds. The public arose as one man and demanded of the medical profession that the epidemic be checked. But what was to be done? There was one way to stop it—one way only—and the

health officer opposed that way. In September, 1902, the health officer who had failed on account of his opposition to vaccination, and whose failure had cost the city all too dearly, was removed, and in his stead another appointed. The people rallied to his support, and no fewer than 195,000 were vaccinated. But back to the epidemic: In 1903 there were 106 cases and 22 deaths in Cleveland. The epidemic is checked. In 1904 there were 42 cases and no deaths. The epidemic is controlled. In 1905 there were no cases, no deaths. Congratulations to Cleveland.

—*Bulletin Virginia Board of Health.*

ANOTHER DEATH FROM MRS. WINSLOW'S SOOTHING SYRUP.

Dr. John M. Edwards, commissioner of health, Mankato, Minn., reports the death of Mary Veigel, aged eighteen months, from an overdose of Mrs. Winslow's Soothing Syrup. He writes:

"The undertaker came to my office for a burial permit for a child who had died, the parents said, of measles. The undertaker called my attention to the fact that the parents made a request for a burial permit worded that way. The coroner was called, and asked me to assist him in making an investigation. The child had been the youngest of a family of five, all of whom had measles. The child had been doing very well, so its mother said, until twelve hours before its death, when it became peevish and cross. At eight A. M. she gave the child the first dose of Mrs. Winslow's Soothing Syrup. The child being fussy and fretful, the mother continued to give her this medicine until she had taken about half the contents of the bottle. About two or three o'clock in the afternoon the child died. I put down the chief cause of death as poisoning from Mrs. Winslow's Soothing Syrup, and the contributing cause as measles. As the child had been sick, her system was more or less undermined, and she fell an easy prey to the medicine.

"I submitted the remaining part of the bottle which I took from the house to the laboratory of the State Board of Health, at St. Paul, and I have on file in my office the analysis of the contents, in which the chemist found morphin."

Flies should not be permitted to remain in the room with a typhoid fever case, any more than the *Stegomyia* mosquito with a yellow fever patient.

DOES DISINFECTION DISINFECT?

Illinois State Board of Health.

In a very remarkable paper on "The Fetich of Disinfection," read before the section on hygiene and sanitary science of the American Medical Association, Dr. C. V. Chapin, of Providence, R. I., questions the value of disinfection in the prevention of the spread of disease, and suggests that the procedure is the outgrowth of the days of early medical mysticism, when burnt sacrifices and fumigations with aromatics were relied upon to appease the devils or other supernatural powers which were responsible for disease. This remarkable paper—which is remarkable on account of the ruthlessness with which the writer tramples under foot the thoroughly founded tenets of sanitary science—has naturally attracted considerable attention, and, unfortunately, the broad generalities of the speaker have been taken quite seriously in some quarters. As contended by some of the physicians who listened to and discussed Doctor Chapin's paper, the claims are so radical that there should have been some showing of fact on the part of the author, by which his contentions could be substantiated. These facts seem to have been lacking.

Among thoroughly scientific men, there can be no harm from bold questioning as to the efficiency of adopted scientific theories, but, unless there is substantial evidence to be produced, it is exceedingly dangerous to create doubts in the minds of the people concerning those factors which have contributed to the public safety and welfare in the past. While the members of the medical profession are not, as a rule, influenced by the astonishing professions of nihilism in matters medical, there is always a certain amount of harm done among laymen in announcing skepticism as to the efficiency of vaccination, antitoxin, disinfection, or any of those factors which have been proven efficient, but concerning which many of the uninformed are still more or less in doubt.

The inventor of the house screen should be immortalized by a statue being placed in the hall of fame.

| | |
|--------------|---------------------------------------|
| Ventilation, | } the "Big 4" of sanitary science. |
| Fumigation, | |
| Vaccination, | |
| Segregation, | |

HEALTH.

HEALTH is a state of physical, mental and moral equilibrium, a normal functioning of body, mind, and soul. It is the state when work is a pleasure, when the world looks good and beautiful, and the battle of life seems worth while. Health is the antithesis of disease, degeneracy, and crime.

The laws of health are as inexorable as the law of gravitation, as exacting as eternal justice, as relentless as fate, and their violation is the beginning and cause of all disease, suffering, and sin.

Health is the most desired of earthly blessings. When finally lost it cannot be purchased by uncounted millions, restored by the alienist, or returned by the pulpit.

Health is that state of happiness, faith and love whose prototype was the first man—Adam; whose ideal is the Christ.

S. J. Crumbine, M. D., Topeka, Kan.

BULLETIN

OF THE

Kansas State Board of Health.

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No. 5.

MAY, 1907.

VOL. 3.

It looks better,
It tastes much better,
It is very much better!
For the Kansas food and drugs law is working overtime.

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VITAL STATISTICS

Reported to the Kansas Board of Health for April, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------------------------|--------------------|----------|-------------------|---------|------------------|---------|-------------------|---------|------------|---------|-------------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| The State...total, April, 1907..... | 118 103 | 78 62 | 30 54 | 12 3 | 79 44 | 11 2 | 118 124 | 12 2 | 272 266 | 0 0 | 1904 113 | 18 2 |
| Allen..... | 3 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 10 | 0 |
| Anderson..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| Barber..... | 2 | 1 | 1 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| Barton..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 6 | 0 |
| Bourbon..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 50 | 0 |
| Brown..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 |
| Butler..... | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 65 | 0 |
| Chase..... | 1 | 0 | 4 | 0 | 0 | 0 | 3 | 1 | 13 | 0 | 3 | 0 |
| Chautauqua..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cherokee..... | 2 | 2 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 11 | 1 |
| Cheyenne..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Clark..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Clay..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Cloud..... | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 4 | 0 |
| Coffey..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 85 | 0 |
| Comanche..... | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 4 | 0 | 0 | 0 | 0 |
| Cowley..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| Crawford..... | 3 | 3 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 1 |
| Decatur..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Dickinson..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 30 | 0 | 3 | 0 |
| †Doniphan..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Douglas..... | 6 | 6 | 4 | 4 | 5 | 1 | 0 | 0 | 2 | 0 | 172 | 0 |
| Edwards..... | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 |
| Elk..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 |
| Ellis..... | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 50 | 0 |
| †Ellsworth..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Finney..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ford..... | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | 0 |
| Franklin..... | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Geary..... | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Gove..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Graham..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| †Grant..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gray..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Greeley..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Greenwood..... | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 6 | 0 | 10 | 1 |
| †Hamilton..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Harper..... | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 1 | 0 | 0 | 1 | 0 |
| Harvey..... | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 |
| Haskell..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Hodgeman..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Jackson..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Jefferson..... | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 |
| Jewell..... | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Johnson..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Kearny..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 30 | 1 |
| Kingman..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Kiowa..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Labette..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 37 | 0 |
| †Lane..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Leavenworth..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lincoln..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| †Linn..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Logan..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lyon..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 |
| Marion..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Marshall..... | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 |
| McPherson..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|--------------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| Moede | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Miami | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Montgomery | 2 | 2 | 0 | 0 | 2 | 1 | 3 | 0 | 9 | 0 | 6 | 0 |
| Morris | | | | | | | | | | | | |
| Morton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| Nemaha | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 |
| Neosho | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| † Ness | | | | | | | | | | | | |
| Norton | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Osborne | 7 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 |
| Ottawa | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 40 | 0 |
| Pawnee | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 30 | 0 |
| Phillips | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Pottawatomie | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Pratt | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| Rawlins | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| Reno | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 17 | 0 | 6 | 0 |
| Republic | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rice | 5 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Riley | 2 | 0 | 0 | 0 | 2 | 0 | 7 | 1 | 2 | 0 | 24 | 2 |
| Roos | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Rush | | | | | | | | | | | | |
| † Russell | | | | | | | | | | | | |
| Saline | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 65 | 0 |
| Scott | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| Sedgwick | 0 | 0 | 0 | 0 | 3 | 0 | 8 | 1 | 14 | 0 | 0 | 0 |
| Seward | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 300 | 0 |
| Shawnee | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 0 | 0 | 6 | 0 |
| Sheridan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| Sherman | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 6 | 0 |
| Smith | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 20 | 0 |
| Stafford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 |
| † Stanton | | | | | | | | | | | | |
| † Stevens | | | | | | | | | | | | |
| Sumner | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 |
| Thomas | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Trego | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| Wabaunsee | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Wallace | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Washington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Wichita | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Wilson | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 16 | 0 |
| Woodson | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotta | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 39 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison | | | | | | | | | | | | |
| Coffeyville | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| Kansas City | 25 | 23 | 8 | 6 | 6 | 1 | 1 | 0 | 1 | 0 | 458 | 11 |
| Leavenworth | 6 | 6 | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| Parsons | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Topeka | 2 | 2 | 0 | 0 | 8 | 1 | 2 | 1 | 0 | 0 | 99 | 1 |
| Wichita | | | | | | | | | | | | |
| State Institutions | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

FOOD ANALYSES, No. VIII.

By E. H. S. BAILEY, Food Analyst for the Board.

LAWRENCE, KAN., May 15, 1907.

CORN-STARCH.

In the process of manufacture of corn-starch some sulfur dioxid or sodium sulfite is used, probably for the purpose of preventing disagreeable odors arising from by-products rather than as a bleaching agent. As shown by the analyses reported below, the sulfite is not completely removed in subsequent operations, except in a few cases. Although the sulfite may not be added for the purpose of lowering the standard, or even as a preservative, yet, according to regulation 9 and regulation 12, sulfur dioxid should be completely removed before the material is put upon the market.

No. 10000. Sunburst Corn Starch. Packed for the Theodore Poehler Mercantile Company, Lawrence and Emporia. Contains sulfites.

No. 10001. Congress Corn Starch. Packed expressly for the Kansas City Wholesale Grocery Company. Contains sulfites.

No. 10002. Best Corn Starch. Manufactured by the Corn Product Company, Chicago. Practically free from sulfites.

No. 5004. Hoosier Corn Starch. Made by Piel Brothers Starch Company, Indianapolis, Ind. Contains sulfite, and also considerable artificial bluing, probably ultramarine.

No. 5006. Kingsford's Corn Starch. Manufactured by T. Kingsford & Son, Oswego, N. Y. Contains sulfites and artificial bluing.

No. 5007. Continental Corn Starch. Manufactured by Douglass & Co., Cedar Rapids, Iowa. Contains sulfites.

No. 10004. Old Home Corn Starch. Manufactured for the Ridenour-Baker Grocery Company, Kansas City. Practically free from sulfites.

RICE.

No. 7008. Fancy Hond. Rice. Purchased April 10 of Edw. C. Strickler, Girard. Manufacturer (or jobber), N. A. McCord Mercantile Company, St. Joseph, Mo. This sample showed the presence of glucose and some mineral matter, and would seem to come under federal F. I. D. No. 67.

SUGAR.

No. 5005. Two samples purchased from the National Biscuit Company, St. Joseph, Mo., invoice of April 8: (a) marked "Powdered Sugar"; (b) marked "XXXX Powdered Sugar." A question

on the relative sizes of sugar corresponding to the different brands having arisen, these were submitted to Prof. C. M. Sterling, who reports that there is practically very little difference in the fineness of the two samples, though, if anything, the one marked "powdered sugar" was finer than the "XXXX powdered sugar." These samples were free from starch or other impurities.

Other samples, marked XX, XXX, and XXXX, were received from another jobber, between which there was a decided gradation of fineness, the XXXX being the finest.

BEVERAGES.

No. 3038. Great American Hop Ale, carbonated. American Beverage Company, Atlanta, Ga. Bottled by the Coco-cola Bottling Works, Topeka. This contained 0.46 per cent. of alcohol by volume. It would be illegal, as it contains saccharin as sweetening substance.

No. 6005. Ironbrew. Made from extract manufactured by Maas & Woldstein Extract Company, 100 William street, New York. Bottled by Geo. Grubel, jr., Kansas City, Kan. Purchased by H. Bell. This was found to contain no alcohol, and to be free from iron. It is, however, sweetened with saccharin, and illegal.

No. 3056. Egg Nutrine. This is a material put upon the market to take the place of fresh eggs. The manufacturers claim that it is "always fresh, always uniform, perfect substitute for the whole egg. One pound of egg nutrine dissolved in warm or cold water equals one gallon, or seven or eight dozen fresh eggs." Manufactured by Henry H. Ottens Manufacturing Company (inc.), Philadelphia. Upon the original package is a picture of a hen. This article is "misbranded" It consists essentially of starch, with a little sugar and albumin, and is artificially colored yellow. It is said to retail at forty-five cents per pound.

EXTRACTS.

No. 7003. Extract of Lemon. Purchased April 18 of the jobbers, Wells Bros. Commercial Company, wholesale grocers. Marked: "1½ ozs. net weight, Standard Extract of Lemon, for flavoring ice-cream, cake, jellies, custards, etc. Shearer-Gillett Co., Mfg's., Chicago." This actually measures 1.14 ounces, which, subtracted from 1.25 ounces, the amount stated on label, shows that it is 9 per cent. short weight. It is not artificially colored and contains 6 per cent. of oil of lemon by volume. Except for the short weight it would be passed.

No. 3046. Economy Pure Flavoring Extract of Lemon. St. Louis Chemical Company, St. Louis. The sticker on the back

reads as follows: "This is a pure soluble extract of lemon, made from the finest Messina oil of lemon, ethyl alcohol, and water, and colored. Manufactured by Handley Kinsella Coffee and Spice Company." This is illegal from the fact that it contains so little oil of lemon that it cannot be determined, while it should contain five per cent. The fact that it is marked "flavoring extract of lemon" would make no difference, as the addition of this word "flavoring" does not detract from the misleading character of the label.

No. 2991. Wild Flower Flavoring Extract of Lemon. Long Bros. Grocery Company, Kansas City. This sample contained so little oil of lemon that the quantity could not be determined. It is therefore illegal.

No. 7005. President Brand Flavoring Extract of Lemon. Purchased April 24 of the Pittsburg Wholesale Grocery Company, Pittsburg, Kan. Size, No. 1½. Passed.

PRESERVATIVES.

No. 3020. C. D. Formen Chemical Company, Geneva, Ohio. This is sold as a preservative for cider. It is sodium benzoate.

No. 7007. "Preservit." Purchased at Fort Scott April 30. Used as a cider preservative. This consists of sodium benzoate.

Another small sample, marked "Otto Kahn & Brother, 268 Water street, New York," is of the same composition.

VINEGAR.

No. 7006. Purchased April 30 of S. O. Spencer, Fort Scott. Said to be a mixture of cider and malt vinegar. This contains 3.51 per cent. of acetic acid. It is illegal, because, first, it does not contain four per cent. of acetic acid; and second, because it is not labeled a mixture of cider and malt vinegar.

No. 3024. Cushing's Best Improved Apple Cider Vinegar. St. Louis Vinegar Company, C. C. Cushing & Co., proprietors. This sample contained 5.5 per cent. of acetic acid. It is, however, illegal because misbranded. It is not wholly an apple or cider vinegar.

No. 7001. Purchased April 9 of Frank Manlove, Fort Scott. Manufactured by O. L. Gregory Vinegar Company, St. Louis. Marked "100 grain, colored, distilled." This contains 9.61 per cent. acetic acid. Passed. There would be no objection to diluting this with water if not reduced below four per cent. acid strength. The department does not recognize the use of the term "grain" as defining the strength of vinegar, as this term has such a different value placed upon it by different manufacturers.

No. 3022. Extra Family Vinegar. St. Louis Vinegar Company, Pike county. Sample contains 4.5 per cent. acetic acid. It is evi-

dently a spirit of malt vinegar, artificially colored. It is illegal from the fact that there is no statement on the label that it is colored with caramel or some similar substance.

No. 2970. From E. E. Brown, Wellington, Kan. Manufactured by Red Cross Vinegar Company, St. Louis. Brand on barrel states that it contains pure apple vinegar, high grade. Sample contains 4.13 per cent. of acetic acid. It is incorrectly branded cider vinegar and is therefore illegal.

The assistance of Dr. R. W. Curtis and Mr. H. C. Johnson is acknowledged.

Respectfully submitted. E. H. S. BAILEY.

By J. T. WILLARD, M.S., Food Analyst for the Board.

MANHATTAN, KAN., May 18, 1907.

BUTTER.

Pursuant to instructions, I procured a number of samples of country butter, with a view to making some investigations concerning this product as found in the market. The samples reported upon were all purchased and analyzed during the winter months. The following table exhibits results obtained:

| Number. | Gross weight. | Net weight. | Moisture. | Curd. | Salt and ash. | Fat. |
|--------------|---------------|-------------|-----------|-------|---------------|--------|
| 12,073 | 14.5 oz. | 13.5 oz. | 10.89% | 1.26% | 1.84% | 86.00% |
| 12,074 | 15.6 | 14.4 | 15.09 | 1.24 | 3.51 | 80.16 |
| 12,075 | 15.0 | 14.7 | 10.41 | 1.70 | 2.11 | 85.88 |
| 12,076 | 16.3 | 16.2 | 14.14 | 1.98 | 1.95 | 81.91 |
| 12,077 | 15.9 | 15.7 | 12.14 | 2.06 | 2.03 | 83.76 |
| 12,078 | 16.2 | 16.1 | 12.07 | 2.76 | 1.29 | 83.88 |
| 12,079 | 15.0 | 14.9 | 14.04 | 1.64 | 2.98 | 81.34 |
| 12,080 | 15.2 | 14.8 | 12.91 | 1.08 | 2.78 | 82.23 |

In all cases the butter reported on above was purchased in prints, which the consumer would suppose were intended to be pounds. The figures show that in only two of the eight cases did the weight come up to sixteen ounces. From this it would seem that the production of short-weight prints is not limited to creameries. The solution of the problem of butter weights rests entirely with the consumer. If the consuming public will insist upon butter weighed to the purchaser free from wrappings, sellers will meet the demand. But, so long as purchasers are content to buy prints which may vary in weight from 13½ to 16½ ounces, many manufacturers will continue to supply short weight, to the disadvantage not only of the consumer but of the manufacturer who makes them average

sixteen ounces each in weight. The water is in every case below sixteen per cent, but the fat, in four instances, is less than the standard of 82.5 per cent. This is due to the undue amounts of curd, salt and ash present.

OYSTERS.

Two samples of fresh oysters, supposed to be the cause of illness, were sent to me for examination. Qualitative tests showing the presence of copper; quantitative determinations were made. As copper is recognized as a normal constituent of many species of mollusks, being present as a blood pigment, it seemed desirable to make tests of other samples. To this end other fresh oysters were purchased, and a number of samples of canned oysters. While a further investigation of the subject is to be made next fall, after the opening of the oyster season, the results obtained in this preliminary examination are of sufficient interest to warrant their publication now, and full discussion of the subject will be given later.

No. 12067. Oysters sent by Doctor Crumbine and received January 7, 1907. Suspected of causing illness. Liquor slightly acid. No reaction for boric acid or borates. Sulfites and formaldehydes absent. The oysters in this sample were distinctly bluish, but not as markedly so as No. 12068. Fresh oysters (32.03 grams) containing 4.64 grams of dry matter were ashed, treated with dilute sulfuric acid, and the copper in them deposited electrolytically; 0.0140 grams of copper were deposited. This is 0.0447 per cent. of the fresh weight, and 0.3017 per cent. of the dry weight.

No. 12068. Oysters sent by Dr. L. R. King, Junction City, Kan., marked "No. 1, Booth, New York." Some of the oysters were of marked bluish-green color. They possessed a noticeable coppery taste. Liquor neutral, or very faintly acid. Sulfites and formaldehyde were absent. 33.58 grams, giving a dry weight of 5.17 grams, were used, and yielded 0.0109 grams metallic copper. Percentage of copper in fresh oysters, 0.032; in dry substance, 0.2118.

No. 12069. Oysters from Dr. L. R. King, Junction City, marked "No. 2, Platt, Baltimore." Brownish color, no coppery taste. No sulfites or formaldehyde present. These oysters contained a small amount of copper, but the results have been lost.

No. 12081. Cove Oysters, large can, "Sunburst" brand. Packed by Varn-Byrd Company, Young's Island, S. C., for the Theodore Poehler Mercantile Company, Lawrence and Emporia, Kan. 50.95 grams of oysters gave 0.0080 grams of copper, 0.015 per cent. The copper in these oysters and in the other samples of cove oysters was determined electrolytically. The solution for electrolysis was

prepared by digesting the oysters with pure concentrated sulfuric acid, as for the determination of nitrogen. By properly apportioning the quantity of acid, there was little remaining at the end of the digestion, and on dilution of the solution and filtering it answered admirably for the determination of copper. A little paraffin was used in the digestion flask to control foaming. The process as a whole was far more convenient than that in which the oysters were first dried and ashed.

No. 12082. Cove Oysters, "Shamrock" brand. Packed at Violet, La., for the Eastern Packing Company, Baltimore, Md. 51.0975 grams of the oysters gave 0.0056 grams of copper, or 0.011 per cent.

No. 12083. Cove Oysters, "Baltimore Pride" brand. Packed by the Ward Canning Company, Baltimore, Md. Factories at Young's Island and Bluffton, S. C., and Thunderbolt, Ga. The exact source of the oysters in this can was not stated. 51.495 grams of oysters gave 0.0019 grams of copper, or 0.004 per cent.

No. 12084. Cove Oysters, "Sheep's Head" brand. Letts-Spencer Grocery Company, St. Joseph, Mo. These oysters showed more of a greenish color than usual. 48.544 grams of oysters gave 0.0050 grams of copper, or 0.010 per cent.

No. 12085. Cove Oysters, "Lee" brand. H. D. Lee Mercantile Company, Salina, Kan. 49.844 grams of oysters gave 0.0021 grams of copper, or 0.004 per cent.

No. 12086. Cove Oysters, "Rose" brand. Packed for Chesapeake Oyster Company. Apparently packed at Violet, La. 49.644 grams oysters gave 0.0057 grams copper, or 0.011 per cent.

No. 12087. Booth's Fresh Oysters. 25.115 grams gave 0.0005 grams copper, or 0.002 per cent.

In every instance, the oysters thus far examined have shown the presence of copper in amount sufficient for quantitative determination. It is my purpose to pursue this inquiry further, obtaining samples of known origin, directly from the shells, but at present the indications are that copper is a normal constituent of oysters. Whether the larger quantities sometimes observed should be regarded as pathological or not, cannot be stated at present. It is possible that local conditions of certain oyster beds may cause a deposit of larger amounts of this metal in the oysters grown there. If the presence of the coppery taste, upon further observation, should prove to be concomitant with the larger percentage of copper, it would afford a warning to consumers. The bluish color will also serve in this way. It is not unlikely that some individuals are more susceptible to the action of copper salts than others.

CODFISH.

No. 1101. Beardsley's Shredded Codfish, "Jewel" brand. Purchased of I. B. Brown & Co., Topeka, April 9. Manufacturer (or jobber), J. W. Beardsley's Sons, New York. Sulfites, borax and salicylic acid not found. Passed.

No. 1102. Boneless Codfish, "Intrinsic" brand. Purchased April 9, of I. B. Brown & Co., Topeka. Jobber, Parkhurst, Davis & Co., Topeka. Tested for sulfites, borax, and salicylic acid, and found free from them. Passed.

ICE-CREAM.

No. 6001. Ice-cream, purchased April 15. Manufactured by the Sanitary Milk Company, Kansas City, Kan. Found to contain 14 per cent. of fat. Gelatin present. Starch and formaldehyde not found. Passed.

No. 6002. Ice-cream, purchased April 15, of Tom Lilley, Kansas City, Kan. Manufactured by Central Dairy Company, Kansas City, Mo. Found to contain 10.85 per cent. of fat. Gelatin present. Starch and formaldehyde not found. Illegal.

No. 6003. Ice-cream, purchased April 15, of the manufacturer, Sam Freedman, Kansas City, Kan. Contained 5.4 per cent. of fat. Gelatin present. Starch and formaldehyde not found. Illegal.

No. 6004. Ice-cream, purchased April 15. Name of retailer not given. Manufactured by the De Coursey Creamery Company, Kansas City, Kan. Contained 15.3 per cent. of fat, and no gelatin, starch or formaldehyde found present. Passed.

No. 5010. Vanilla ice-cream, purchased April 30. Manufactured at Heinz's ice-cream factory and milk depot, Topeka, Kan. Contained 15.65 per cent. of fat. No formaldehyde. Passed.

No. 5011. Vanilla ice-cream, purchased April 30, of the manufacturer, W. H. Batman, Topeka, Kan. Contained 18.4 per cent. of fat. No formaldehyde. Passed.

No. 5012. Vanilla ice-cream, purchased April 30. Manufactured by M. F. Rigby, Topeka, Kan. Contained 21.1 per cent. of fat and no formaldehyde. Passed.

No. 5013. Vanilla ice-cream, purchased April 30. Manufactured by Palace of Sweets, Topeka, Kan. Contained 21.3 per cent. of fat. No formaldehyde. Passed.

No. 5014. Vanilla ice-cream, purchased April 30. Manufactured by Topeka Pure Milk Company, Topeka, Kan. Contained 19.4 per cent. of fat. No formaldehyde. Passed.

No. 5015. Vanilla ice-cream, purchased April 30, of J. M.

Brunt, Topeka, Kan. Manufactured by Baughman Bros., Topeka, Contained 17.1 per cent. of fat and no formaldehyde. Passed.

No. 5016. Vanilla ice-cream, purchased April 30, of T. Morris, Topeka, Kan. Manufactured by Scott Bros., Topeka. Contained 14.8 per cent. of fat and no formaldehyde. Passed.

Respectfully submitted.

J. T. WILLARD.

DRUG ANALYSES, No. V.

By L. E. SAYRE, Ph. M., Director of Drug Analysis for the Board.

I have to report that additions and corrections to the United States Pharmacopœia, eighth revision, have been made up to May 1, 1907. These corrections and additions occupy six pages of closely printed matter. It should be stated that these additions and corrections have been the result of an immense amount of work on the part of a few of the members of the subcommittee on inorganic chemistry, organic chemistry, and alkaloidal assay, the food and drugs law necessitating this labor. It is likely that many questions will still come before the committee for settlement, and it will take time to adjust standards so that they will be perfectly harmonious with the new law.

Doctor Wiley, of Washington, has expressed himself, and expressed the decision of his department, that these additions of the pharmacopœia will be adopted as the United States standard. He further states that, so far as the Pure Food and Drugs Commission is concerned, it should be understood that what is satisfactory to the committee of revision is satisfactory to the commission. He adds:

"It will be noted that the law states specifically that the pharmacopœia, official at the time of investigation, shall be the authority as to strength, quality, or purity; hence, no matter what change or corrections shall be made in the pharmacopœia by the proper authorities, the government is bound by the modified standards."

A copy of these additions and corrections can be obtained by sending to P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia, and if between May 1, and June 1, 1907, the committee on revision make any further revisions or corrections than those now printed, a supplementary list will be prepared, which will be mailed if the applicant will send to P. Blakiston's Son & Co. a stamped, addressed envelope.

The great majority of the corrections of the pharmacopœia have been mainly verbal and are of no special importance, as many,

ignorant of the facts, have stated. There are certain facts, however, that represent concessions to the wholesale trade and the manufacturing chemists, the latter having stated that certain high standards were practically impossible. The new standards for the alkaloidal drugs and preparations are as follows:

Belladonna leaf, reduced from 0.35% to 0.3% mydriatic alkaloids.

Belladonna root, reduced from 0.5% to 0.45% mydriatic alkaloids.

Colchicum seed, reduced from 0.55% to 0.45% of colchicine.

Ipecac, reduced from 2% to 1.75% of ipecac alkaloids.

Stramonium, reduced from 0.35% to 0.25% of mydriatic alkaloids.

Fluid extract of belladonna root, reduced from 0.5 gms. to 0.4 gms. of mydriatic alkaloids in 100 cc.

Tincture of belladonna leaf, reduced from 0.085 gms. to 0.3 gms. of alkaloids in 100 cc.

Fluid extract of colchicum seed, reduced from 0.5 gms. to 0.4 gms. of alkaloids in 100 cc.

Tincture of colchicum seed, reduced from 0.05 gms. to 0.04 gms. of alkaloids in 100 cc.

Fluid extract of ipecac, reduced from 1.75 gms. to 1.5 gms. of alkaloids in 100 cc.

Fluid extract of stramonium, reduced from 0.35 gms. to 0.25 gms. in 100 cc.

Extract of stramonium, reduced from 1.4 gms. to 1 gm. of alkaloids in 100 cc.

Tincture of stramonium, reduced from 0.03 gms. to 0.025 gms. of alkaloids in 100 cc.

Jalap root, reduced from 8% to 7% of total resin.

The National Formulary, third edition, has been fully corrected in the edition supplied for March 15, 1907. A full and complete list of the corrections have been published in the May issue of the Bulletin of the American Pharmaceutical Association, pages 155-158. A copy of this bulletin may be obtained by addressing C. S. N. Halberg, 36 Twelfth street, corner Michigan boulevard, Chicago, Ill.

The drug department has been overcrowded with analytical work from different sections of the state asking for reports on the standard of stocks in hand. To a very great extent this has crowded out other classes of analyses. The department is reorganizing its drug laboratory, and in a few months a special laboratory for drug analysis will be fully equipped, so that reports for our inspectors will be promptly forthcoming. At the present time we beg leave to report examination of the following drugs:

Fluid extract stramonium, from Ray Chemical Company, contained 0.2009 gms. of alkaloid in 100 c.c. Below standard.

Tincture of belladonna leaf, alkaloidal percentage, 0.02583 gms. in 100 cc. Below standard.

Tincture of belladonna leaves, from C. S. Baker & Co., Chicago; alkaloidal percentage, 0.02956 gms. in 100 c.c. Nearly up to the present U. S. P. standard.

No. 1507. Spirits of Camphor, from Larkin & Co., chemists, Buffalo, N. Y. The spirits contained 8.97 gms. in 100 c.c. U. S. P. requires 10 gms. to 100 c.c.

No. 1508. Castor-oil, from Larkin & Co., chemists, Buffalo, N. Y. Specific gravity, 0.956; U. S. P. requires 0.945 to 0.965. Soluble in an equal volume of alcohol. Saponification No. 149; the U. S. P. requires a saponification value 179-180.

No. 1509. Tincture of Arnica, from Larkin & Co., chemists, Buffalo, N. Y. 25 c.c. of Larkin's tincture left, on evaporation, a residue of 1.0649 gms.; 25 c.c. of pure tincture left, on evaporation, a residue of 0.5106.

No. 1513. Camphorated Oil, from Larkin & Co., chemists, Buffalo, N. Y. This oil contained 20 gms. to 100 c.c. Passed.

No. 1538. Powdered Mustard, in paper wrapper, from A. B. Holzschuher. This mustard gave to alcohol, when shaken with it, a marked canary-yellow color. Ordinary ground mustard gives it a very light yellow color. This alcoholic extract, when evaporated, gives with HNO_3 , and with H_2SO_4 the reactions characteristic of artificial coloring. An alcoholic extract of mustard gives reactions so markedly similar as to be confusing.

No. 1539. Stuart's Dyspepsia Tablets. The large tablets, supposed to contain the ferments, showed no appreciable action on fibrin in twenty-four hours' digestion. One gram of the tablet powdered digested 0.0078 gram of fibrin in twenty-four hours. In the small tablets analyzed we could find no strychnine or bismuth; both claimed to be present. Hydrastis was present in traces.

No. 1540. Doctor Pepper's Phos-ferrates, from Capital City Bottling Works. Manufactured by Artesian Manufacturing and Bottling Company, Waco, Tex. Contained iron 0.048 per cent., phosphates only in traces.

No. 1541. Coca-Cola No. 11005. Syrup Coca-Cola. Coca-Cola Bottling Company, Topeka. Manufactured by Coca-Cola Company, Atlanta, Ga. Sample contained: Total alkaloïds, 0.08 per cent., principally caffeine; cocaine, none; alcohol, 0.067 per cent. Contained no saccharin.

Obesity Tablets S. Z. Special tablets. One tablet weighed 0.568 grams; contained alkali carbonate, $0.265 \text{ Na}_2\text{CO}_3$.

No. 1543. Tasteless quinine syrup. Manufactured by Porter

Ryerson Thobler. Contained 0.1572 per cent. total alkaloid, and 0.1540 per cent. ether soluble alkaloid.

No. 1544. Tasteless quinine "Febriline." Amorphous quinine. Lyons-Paris Medicine Company. Contained 1.9272 per cent. total alkaloids, and 1.8792 per cent. ether soluble alkaloids.

No. 1545. Gum Opii. Palace Drug Company, Manhattan, Kan. Contained 8.6 per cent. morphine. U. S. P. requires 9 per cent.

No. 1546. Sweet Spirits Niter. Thompson & Taylor Spice Company, Chicago, Ill. Specific gravity, 0.952; acid in reaction; liberates a little CO_2 from NaHCO_3 ; does not boil at 65°C .; yields 0.04 per cent. ethyl nitrite. U. S. P. requires not less than 4 per cent.

No. 1547. Davies' Non-alcoholic Wahoo. The Davies Remedy Company, Buffalo, N. Y. Does not contain alcohol.

No. 1548. Solution Carbolic Acid. Thompson & Taylor Spice Company, Chicago. Contains 5.16 per cent. phenol. The preparation is dispensed in bottles of the same shape and size as those containing sweet-oil and flavoring extracts, with the same kind of a label but without skull and cross-bones, and only the word POISON, in small letters, printed upon it. I believe this to be contrary to ideal precaution.

No. 1549. Sweet-oil (standard). Thompson & Taylor Spice Company. Specific gravity, 0.918. U. S. P. requires 0.910 to 0.915. Two c.c. of olive oil shaken with two c.c. of HNO_3 became a brown color, showing the presence of cottonseed and other seed oils. Five c.c. of the oil, shaken with five c.c. of alcoholic AgNO_3 + 2 drops of nitric acid, acquired when heated on the water-bath a brown color, showing more than five per cent. cottonseed-oil.

No. 1550. Helmbold's Highly Concentrated Compound Fluid Extract of Buchu. Twenty-five c.c. gave, on evaporation, 0.3488 grams, or 1.3952 per cent. residue. Twenty-five c.c. of standard fluid extract of buchu gave, on evaporation, 2.0180 grams, or 8.0720 per cent. residue.

No. 1551. Malagna Olive-oil. Carl Engel Mercantile and Drug Company, Manhattan, Kan. Specific gravity, 0.917. Shaken out with HNO_3 , brown color. Five c.c. of oil shaken with five c.c. of alcohol AgNO_3 + 2 drops of HNO_3 gave brown color, showing more than five per cent. cottonseed-oil.

No. 1552. Syrup Iodide of Iron. Made from concentrated solution, by R. A. Hassig, Kansas City, Kan. Yielded 4.32 per cent. of salt. The concentrated solution, therefore, is practically standard (standard is five per cent.)

A sample of coffee, No. 7009, from A. G. Pike, inspector, came to this laboratory for an opinion. It was stated that the coffee had been coated with grape-sugar. The question asked by the inspector was: Should it be labeled "compound," and should the words "grape-sugar" be used? On washing the external portion of this coffee and testing for sugar, it was found to contain a small quantity of reducing sugars by the copper test. The coffee was of inferior grade, consisting largely of imperfect, broken and overroasted grains. It had not been carefully sifted nor garbled. The opinion of the analyst is that the coating referred to was possibly an unsuccessful means of disguising its inferiority and poor quality.

No. 1553. Ground Ginger (Yale spices), from Steinwender-Stoffregen Coffee Company, St. Louis, Mo. Microscopical examination proved this to contain no foreign substance. Oleoresin strength not determined.

Respectfully submitted.

L. E. SAYRE.

Synopsis of the Kansas Food and Drugs Law.

The following information bearing on the general scope of the new food and drugs law, and the policy of the State Board of Health in the enforcement of the law, may be of interest to manufacturers and dealers, and is herewith submitted:

THE LAW.—Complete copies of the Kansas food and drugs law, the rules and regulations governing its enforcement, may be obtained by writing the chief food and drug inspector, Topeka, Kan. The law is known and should be referred to as the Kansas food and drugs law, of February 14, 1907.

GENERAL.—The law prohibits the manufacturing within the state, the keeping for sale, or offering for sale within the state of foods, drinks, liquors or medicines that are adulterated or misbranded, within the meaning of the law.

EFFECTIVE.—The law became effective February 14, 1907.

WEIGHTS AND MEASURES.—The law does not require that the weight or measure of the contents of a package shall be stated upon the label. It only requires that, when a weight or measure is stated, it shall be the true net weight or measure. Any weight or measure printed on matter inside of the package is subject to the same regulations as weights and measures printed on matter outside of the package. This also applies to goods sold by count.

GUARANTY.—The law permits of a guaranty being given by the

ticles will be required to be kept in as sanitary condition as possible. While safeguarding the interests of the people, on the one hand, it is our purpose to deal in all fairness, justice and frankness with the trade on the other.

Food and Drugs Law Catechism.

Continued from April BULLETIN.

The following are some questions that have been asked us:

Ques. Does a label reading "sweet-oil" mean that it should be an olive-oil?

Ans. Yes, unless a statement is made on the same label indicating what kind of oil it is, if another oil is used.

Q. What is the office of the city or county health officer in the enforcement of the food and drugs law?

A. Regulation 32 provides that when any local health officer shall find any place where drugs and foods are manufactured, stored or offered for sale in an unwholesome or unsanitary condition he shall give the owner, agent or manager of such a place a written notice to correct such unsanitary condition, and any neglect or refusal to comply with such notice shall subject such person to the penalties provided in section 3 of the law.

Q. Does the food and drugs law apply to tobacco?

A. No.

Q. Can a jobber become immune from prosecution under the law in the same way as the retailer—by having invoices stamped by the manufacturer?

A. Yes.

Q. If a druggist sells twenty-five cents worth of pills from a bottle of 500, which is guaranteed by the manufacturer, does the dealer have to label these pills, guaranteeing them to conform with the law?

A. No. The law does not require a guaranty on any food or drug product. It requires certain statements to be made upon the label, which are clearly defined in the law.

Q. Are all preservatives not allowable? If any, which would be most preferable?

A. Three preservatives are permitted by the Board in certain perishable food products, provided their presence and the amount used is stated upon the principal label. They are, boracic acid or borax, salicylic acid, and benzoic acid or benzoate of soda. Preservatives of all kinds are prohibited in meat products.

Q. What should whole milk and cream test in butter-fat?

A. Milk should contain at least 3.25 per cent. of butter-fat, and cream should contain at least eighteen per cent. of butter-fat.

Q. Can gelatin and eggs be used in ice-cream?

A. Yes, for the present, the Board is permitting the use of gelatin and eggs in ice-cream. It must, however, contain fourteen per cent. of butter-fat, in addition.

Q. What is the use of jobber's general guaranty if food is not pure?

A. No use, except as standing between the dealer holding such guaranty and the law.

Q. Is it necessary to have pickles, kraut and fish covered up when in barrels and standing on the floor in storerooms?

A. Yes, all food products should be protected from dust, flies, and other contamination.

Q. What is the standard for strength of distilled vinegar?

A. All vinegars should contain at least four per cent. acetic acid.

Q. How should I label the following mixture: 1 oz. fluid extract of wild cherry; 1 oz. syrup of squills; 1 oz. syrup of ipecac; $\frac{1}{2}$ oz. chloroform; 1 oz. alcohol; 1 quart simple syrup; mix.

A. This might be properly labeled in two different ways: First, by writing the formula as here given, on the label, they all being official preparations; or, the per cent. of alcohol by volume in the mixture may be stated, and the minims of chloroform per fluid ounce.

Q. What is the pure food law in regard to mixed flour?

A. A label should be on such mixtures, stating the kinds of flour entering into such mixture.

Q. If ice-cream does not contain fourteen per cent. of butter-fat, how should it be labeled to retailer?

A. I don't know. It must contain fourteen per cent. of butter-fat if sold as ice-cream.

Q. Does eight-year-old whisky have to be eight years old?

A. Most assuredly.

Q. When does the new law take effect?

A. It took effect on February 16, 1907.

Q. How about dry measure as to apples, potatoes, etc.?

A. When you buy or sell a bushel it must be a bushel.

Q. Does this food law end the life of the red lemonade, the orange oider, and the tartaric-acid lemonade?

A. It does, unless branded as imitation products.

Q. Is mustard, when used as a preservative, illegal?

A. No.

Q. May Peruna be sold in Kansas under the new law?

A. Yes, if the alcoholic content is stated on the principal label.

Q. Is there a law against buckwheat flour containing Kafir-corn flour in it?

A. Not if the label states that it is a blend of buckwheat and Kafir-corn flour.

Q. Is it wrong to sell beet-sugar without telling the customer that he is getting beet?

A. We are unable to say whether or not he will be beet [beat] in such a transaction as that. Chemically, cane-sugar and beet-sugar are identical.

Q. How may a preservative in milk be detected?

A. That is the secret of our analysts.

Q. Is the much-advertised "Kargon" harmless, useful, or injurious?

A. "Kargon" is a word coined to cover well-known common ingredients. It is probably neither harmless, useful, nor injurious.

Q. Is it necessary to label a glass of ice-cream soda which is flavored with adulterated syrups and impure ice-cream?

A. No, but the containers of those articles should be labeled.

Q. Please explain what Doctor Wiley has shown regarding alum as being or not being injurious.

A. Doctor Wiley has not given an opinion on that matter.

Q. What colors, if any, are allowed in ice-cream?

A. Wholesome colors may be used in ice-cream, provided their presence is stated on the label.

Q. Is it unlawful to use coloring in extracts such as lemon or vanilla?

A. No, if their presence is stated on the label.

Q. If a retailer manufactures an article—a jelly, for instance—absolutely of granulated sugar and pure fruit juice only, does the package have to be labeled?

A. No.

Q. In case of crushed fruits served at soda-fountains, must the dispenser state to the customer that it contains artificial color or added preservatives?

A. A label must be on such crushed fruits stating the presence of preservatives and artificial coloring.

Q. Cream of tartar, 11 pounds; soda bicarbonate, 1 pound; starch, 1 pound; mix, making baking-powder. Will the simple label of "baking-powder" pass, under the law?

A. No; the names of the various ingredients must be on the label.

Q. In the sale of spirits of camphor, bay rum, spirits of niter, will a label bearing those names be sufficient, or will the percentage of alcohol be obliged to be stated also?

A. The names of United States Pharmacopœia or National Formulary preparations will be sufficient when sold as such in broken packages. The percentage of alcohol does not need to be stated.

Q. Are patent medicines and proprietary medicines that were on hand when the law went into effect salable?

A. Yes; such articles that are not properly labeled may be sold until the 1st of October, 1907, after which time they must be properly labeled.

Q. Should a druggist get a guaranty slip to paste on medicines on hand in order to make them salable?

A. No; the mere pasting of the guaranty slip on a misbranded or adulterated article does not cure such defect, under the law.

Q. Can a small druggist who cannot analyze his drugs be held responsible for the purity of same?

A. Yes; the law, however, provides a way in which he may have immunity from prosecution under the law, by having goods purchased from the manufacturers or jobbers guaranteed to him under the Kansas law.

Q. In selling acetanilid compound tablets, how should they be marked?

A. The amount of acetanilid contained in each tablet should be plainly stated on the label.

Q. In making a sale of paregoric, how should the label read?

A. Paregoric. This being an official preparation, it is exempted from stating the alcoholic and opium contents.

Q. What will be done with improperly labeled patents found on the shelves after October 1?

A. They will be required to have labels to comply with the law, for the person selling misbranded patents will be liable to the penalties of the law, after that time.

Q. Is chewing-gum a confection?

A. Yes.

Public Health Reports.

The Fourth Disease (Filatow-Dukes Disease).

By Passed Assistant Surgeon J. W. SCHERESCHIEWSKY, Public Health and Marine Hospital Service.

The recent unusual prevalence of exanthematous diseases in different cities throughout the country and the occasional report of a fourth disease have called renewed attention to the entity of this latter symptom-complex.

By the term "fourth disease" we understand an eruptive fever described by several authors, the exanthem of which assimilates closely the appearance of that of scarlet fever, but which differs from the latter disease chiefly in the length of its period of incubation, the mildness of its invasion, the benignity of its course, the absence of complications, the character and length of the period of desquamation, the brief duration of its infectivity, and, finally, in that it does not confer immunity to other exanthematous diseases.

Historical Summary.—While the clinical pictures conveyed by the descriptions extant of measles and scarlet fever are of so precise and definite a nature as to leave little at present to be accomplished in the way of further additions to their symptom-complex, it must be confessed that the connecting link, as it were, in the chain of the eruptive fevers, namely, rubella, has not been, at the present writing, delineated with the precision and exactitude of its congeners. To say the least, there is an absence, even in the best descriptions of this disease, of that clarity in the depiction of its clinical features which we observe in respect to that of the other exanthemata. The accounts, particularly of its eruption, are so confusing and the variations described are so wide as to lend considerable weight to the hypothesis presently to be discussed, that this disease, as conceived of at present, is capable of resolution into two distinct nosological factors—i. e., rubella and a fourth disease.

Be that as it may, all who have dealt extensively with the eruptive fevers are constantly encountering a typical and anomalous forms of exanthema, which they are at a loss to classify.

These, perforce, for want of a better terminology, they must denominate as abortive scarlet fever, scarlatina recidiva, rubella scarlatiniform, and the like.

The constant occurrence of such cases, in the experience of Clement Dukes, who, by reason of his position as chief surgeon to

a large public school in England, had unusual opportunities for the observation of the eruptive fevers, convinced him that for years he had been encountering an eruptive disorder hitherto confused either with mild scarlatina or with rubella.

In a communication entitled "On the confusion of two diseases under the name of rubella (rose rash)," which appeared in the London *Lancet* of July 14, 1900, he advanced a strong plea, based upon a considerable series of observations, for the recognition of a new specific, contagious, exanthematous disease which rendered the affected individual immune neither to scarlet fever nor rubella, and which was called by him a fourth disease.

His description deals with an eruptive fever, the exanthem of which is very similar to and at times indistinguishable from that of scarlet fever, but differs mainly from that disease in the following points: (1) The period of incubation (nine to twenty-one days); (2) the mildness of the invasion; (3) the rapid fading of the eruption; (4) the benignity of its course; (5) the absence of the characteristic lingual and faucial appearances of scarlet fever; (6) the character of the desquamation and length of its period; (7) the absence of complications, and finally, (8) the failure of this disease to confer immunity either to scarlet fever or rubella.

Dukes bases his paper on a series of three epidemics which he observed occurring in a public school. The first consisted of sixteen cases of this fourth disease. The second consisted of thirty-one cases of the fourth disease concurrently with scarlet fever. The third consisted of nineteen cases of the fourth disease, of which cases forty-two per cent. had suffered the previous year from rubella.

Dukes also states that he had for a long time been familiar with this disease in his practice, but owing to the sporadic occurrence of the cases and his lack of opportunity properly to correlate the phenomena observed, the idea of regarding it as a separate clinical entity did not at first present itself to him, and he was wont to content himself with a diagnosis of roseola of a scarlatiniform type.

Dukes calls the disease he has observed "the fourth disease," for want of a better name, and makes the following conclusions:

1. That although its resemblance is so close to scarlet fever in many features, it cannot possess any affinity with that disease, as both diseases occurred concurrently in the same epidemic.
2. That some of the sufferers had both diseases in the same epidemic.
3. That one person had scarlet fever, followed by "fourth disease."
4. That several had "fourth disease," followed by scarlet fever.

5. In one epidemic of this disease nearly one-half the cases had had rubella the year before.

Upon the appearance of Dukes's article, Broadbent unreservedly indorsed his views. They were further supported by Romer, Kidd, Ashley, and others. On the other hand, Millard, Washbourne, Rutter, Poynton, Williams, Ker, and at a later date (1902) Griffiths, were opposed to the acceptance of the existence of a new disease as advocated by Dukes, believing cases such as he describes to have been either mild scarlatina or rubella.

The next author to corroborate Dukes's observations was J. J. Weaver, medical superintendent of the Southport Borough Infectious Diseases Hospital. Some months before the appearance of Dukes's communication he had been struck by a number of apparent recurrences in cases of scarlet fever, having observed six such recurrences in the space of three months. Impressed by Dukes's article, he made a series of careful observations, of which he read a report before a meeting of the Royal Institute of Public Health, at Eastborne. This report subsequently appeared in the *Journal of State Medicine* in 1901, and describes fourteen instances of such apparent recurrences, with the result of confirming Dukes's observations in all but the most trivial particulars. Careful clinical charts compiled from these cases form an interesting and instructive study, as they disclose the great difference in the clinical severity of the two diseases, and from the charts alone it is possible to determine their order of precedence.

Dukes's communication, important as it was, apparently evoked but little discussion, with the exception of the few brief comments which hailed its publication. Apart from Weaver's article, the first to support Dukes's contention by actual clinical observations, a search through medical literature reveals an almost complete dearth of reference to this subject until 1904.

In this year v. Bokay accepts the existence of the "fourth disease," although requiring further clinical observations, and points out that, although Dukes is undoubtedly entitled to the credit of bringing this matter prominently before the medical world, he was by no means the pioneer in the field. A number of years previously N. Filatow preceded him by publishing, in 1885, in the *Russkoi Medicini*, and again in 1896, in a treatise on the acute infectious diseases of childhood, a report in which he details his experience with a hitherto undifferentiated exanthematous disease.

In view of this, v. Bokay proposes that the fourth disease shall be known as the Filatow-Dukes disease, and concludes by express-

ing the hope that as rubella was separated in the last century from measles, so will the fourth disease be separated from scarlet fever in this century.

Filatow's observations on this disease are, by reason of their priority, well worth a brief abstract. In 1884 he observed a case of scarlatiniform exanthem in a member of a family of eleven children, three of whom had had scarlet fever in 1882. Seven in all of the family were successively attacked at brief intervals by this eruption, including a governess twenty-five years old, who had had scarlet fever. Filatow, who believed the cases to be scarlet fever, surprised at the mild course the disease pursued and the prompt recovery made by his patients, congratulated them on an immunity acquired at the expense of so little suffering. Less than a year later, however, he had occasion to revise his diagnosis, as scarlet fever again made its appearance in the family, attacking a six-year-old girl, who died, and three others who had exhibited the fullest efflorescence of the exanthem he had noted the previous year.

Filatow therefore concluded that the first eruptive fever he had observed was not scarlet fever, but an acute specific, infectious and contagious disease, characterized by a scarlatiniform exanthem, but differing from scarlet fever mainly in its mild, uncomplicated course and the peculiarities of its contagion. He suggested the name of "*rubeola scarlatinos*a" for this disease.

The year v. Bokay's article (1904) appeared, both Klein and Ruhemann published short communications detailing similar observations in the case of school children who previously, subsequently or concurrently suffered from rubella and scarlet fever.

Cheinisse, in a carefully considered article, in which he reviews the literature of the subject, strongly supports the hypothesis of the existence of the fourth disease, thus redeeming, to a certain extent, the indifference of French authors to the subject.

Unruh's is the most recent and detailed upon the fourth disease. In it he refers to numerous cases occurring in his practice among school children up to the age of seventeen years, who, either from personal observation or from a well-authenticated history, he knew to have suffered previously from scarlatina or rubella. His description of the clinical course of the disease is painstaking and thorough and shows a close correspondence to previous accounts. He also disagrees with the somewhat erroneous conclusion of v. Bokay's article, in that he considers the fourth disease to be allied much more closely to German measles than to scarlet fever.

Symptoms.—The accounts of the clinical features of the fourth

disease, as given by its several bibliographers, show a close correspondence in details, of which the following is a summary:

Contagiousness.—The disease is decidedly contagious, but less so than either measles or scarlet fever, and the duration of the period of transmissibility does not probably exceed fourteen to twenty-one days.

Period of Incubation.—The period of incubation is from nine to twenty-one days. In one case in which Unruh was able positively to fix the period of incubation it was fifteen days.

Prodromal Symptoms.—Prodromal symptoms are absent in a great many cases, the rash being the initial symptom. In severe cases they are those of any febrile invasion, such as malaise, headache, anorexia, lassitude, and aching pains in the back and extremities. Vomiting is extremely rare.

Catarrhal Symptoms.—These may be absent, but when present consist of a slight reddening of the oral and palatal mucous membrane, a very slight coryza, and trivial pinkness of the conjunctiva.

Eruption.—The eruption makes its appearance in from twenty-four to thirty-six hours after the invasion. Commencing on the face, its development is extremely rapid, covering the entire body in a few hours.

The eruption consists of minutely punctate spots, much smaller than the papules of rubella and less raised than the eruption of measles. The individual points of eruption may, at first, be somewhat diffuse, but they very soon become closely agminated and are bound into large patches by a diffuse erythematous blush.

On the face the impression derived by the observer is that of a wide-spread scarlet stain, whose somewhat irregular and serrated border is caused by lacunæ, uninvaded by the eruption, principally around the nasal and oral regions. Passing from the face it is distributed over the entire surface of the body, with the exception that it does not show the same predilection for the lower part of the abdomen, the inner surfaces of the thighs, and the axillary folds as does the exanthem of scarlet fever. On the upper extremities it is mainly distributed over the extensor surface. The eruption is commonly profuse over the back and nates.

In tint it resembles the color of the scarlet-fever exanthem. There is an absence of that brownish discoloration which we notice in the case of measles and rubella prior to the fading of the eruption. On the contrary, in the fourth disease the bright tint of the eruption is retained up to the time of its disappearance, which occurs after a lapse of two to three days, with a rapidity commensurable with that of its efflorescence.

During the eruptive period the skin lacks the hot, pungent feel characteristic of scarlatina, and the eruption is accompanied by little, if any, itching and discomfort.

With the disappearance of the eruption desquamation usually ensues. This is of a fine, branny character, very rarely in large flakes or patches, and lasts two weeks at most.

Temperature.—A febrile reaction is usually present, though of a mild grade, and bears no relation to the intensity of the eruption. The fullest efflorescence may be accompanied by but a trivial elevation in the temperature. The highest elevation of temperature observed by Unruh was 39.2, in a child two and one-half years old. The fever, if present, rapidly subsides after the outbreak of the eruption, the patient feels entirely well, and is kept in bed with difficulty.

Pulse.—The pulse rate is but little affected by the disease. Unlike scarlet fever, in which even in mild cases the pulse is notably accelerated irrespective of the temperature, the number of beats registered is relative to the degree of febrile reaction observed.

Tongue and Fauces.—There is nothing characteristic in the appearance of the tongue. If the temperature is more than subfebrile, it may be slightly coated. There is, however, an entire absence of that desquamation of the lingual epithelium which causes the well-known "strawberry tongue" of scarlet fever. Sore throat is not complained of, nor are there any faucial symptoms observable, except a slight reddening of the oral and palatal mucous membrane. Koplik's spots are not observed.

Lymphatic Glands.—Some slight enlargement of the cervical and occipital lymph glands, and at an early date, is usually to be made out. It is, however, not so constant nor so universal as is the case in rubella, nor do the glands ever attain that condition of massive enlargement and induration, nor break down and suppurate, as is often the case in scarlet fever.

Course, Complications, and Sequelæ.—The course of the disease is uniformly mild. Most patients do not complain of feeling ill at all, and do not willingly remain in bed. Complications and sequelæ have not been observed, although Unruh records one instance in which a slight, transient albuminuria was observed at the height of fever.

Diagnosis.—It must be confessed that the differentiation of a disease of this character from mild scarlet fever cannot always be easy. Unruh admits that at first he was greatly assisted in the diagnosis by his own knowledge of previous attacks of rubella and

scarlatina. Later, as he acquired greater familiarity with its clinical aspect, he says he had no difficulty in recognizing it when present.

As aids in distinguishing the fourth disease from scarlet fever can be mentioned: The period of incubation (nine to twenty-one days), when this can be ascertained; the knowledge of previous attacks of scarlet fever; the mildness of the symptoms of invasion; the absence of vomiting, anginose symptoms, and the characteristic tongue of scarlatina; the short duration and rapid disappearance of the rash. The albuminuria, so well-nigh constantly observed in scarlet fever, is also not present, nor is the pulse rate in contradistinction to the effect of the scarlatinal poison, even in mild cases, upon the circulation accelerated beyond a degree correlated to the temperature observed.

Unruh lays considerable weight upon the character of the glandular enlargement in fourth disease. This is early and very moderate, as compared with the late and altogether severer swelling of the cervical lymph nodes in scarlet fever.

The constantly benign course, absence of complications, as well as the character and short duration of the desquamation, are of service in making a retrospective diagnosis. Additional information may perhaps be gained by a blood count, which in scarlet fever shows in early leucocytosis, which is persistent for many days. There is no information at present available as to the leucocyte count in fourth disease, but, reasoning *a priori*, it should be similar to that of measles and rubella, in which a leukopenia is observed.

The fourth disease is differentiated from rubella mainly by the character of the eruption, as, in the other symptoms, including the period of incubation, the two diseases present a striking resemblance. The eruption in rubella appears first behind the ears and underneath the lower jaw. Its component elements are altogether larger than those of the fourth disease, show a tendency to coalesce into the so-called "bat's wing" patches, and the eruption as a whole tends to approximate a morbilliform type.

Conclusions.—It will be seen from the foregoing that the crux of the contention of the several advocates of the fourth disease is that the symptom-complex, hitherto known as rubella, actually consists of two diseases, German measles and the fourth disease, which latter, according to the exanthem prevailing at the time, is regularly mistaken either for mild scarlatina or atypical German measles.

It would seem to be established beyond a reasonable doubt that

the fourth disease complies with those conditions which entitle it to a place as a new entity in the catalogue of the eruptive fevers, namely, that it has been seen to attack individuals who have had rubella and scarlatina, and that, conversely, it does not protect against either of these diseases.

Moreover, a certain amount of internal evidence can be adduced in support of the independent existence of this disease.

Thus, while the truth of Cullen's dictum is well established—*i. e.*, that an attack of an eruptive fever confers immunity against that disease during childhood—there have been numerous cases observed of apparent recurrences of attacks of scarlet fever after a lapse of time so short as to imply the acquisition in the primary attack of an immunity of the most evanescent and trivial character. This is directly contrary to our experience, which teaches us that the immunity conferred by scarlet fever to subsequent attacks is, as a rule, complete and lasting.

Moreover, in the overwhelming majority of cases the incubation period of scarlet fever is from three to five days, with a maximum of seven; yet in a table of 113 cases of scarlatina, in which the incubation period had been determined, eight (or nearly seven per cent.) were found to have matured in from nine to twenty-one days after exposure. Besides this, we are informed that cases of scarlet fever are severe in proportion to the shortness of the incubation period, those with an extended period being very mild.

Inasmuch as a short period of incubation is one of the characteristics of scarlet fever, and constancy, within well-defined limits of their periods of incubation, is characteristic of exanthematous diseases in general, the inference is obvious, in the premises, that cases with a protracted period (nine to twenty-one days) reported as scarlet fever are not scarlet fever, but some other disease (*i. e.*, fourth disease) resembling scarlatina.

The epidemiologic interest of this question of the fourth disease is great. To concede its existence clears up many puzzling and anomalous facts in regard to eruptive fevers. Moreover, in cases of fourth disease, which have hitherto been regarded as cases of mild scarlatina, the shortening of the period of quarantine will remove a source of great annoyance and often pecuniary loss to the individuals concerned.

It has been urged, however, that, in the absence of more complete data, the possibility of the confusion of Dukes's disease with scarlet fever is not without danger to the community at large. While no harm and only inconvenience can arise by the mistaking

of this disease for scarlet fever, the converse, with the subsequent too early release of the patient from isolation, would constitute a menace to the public health, and might be the starting-point of a serious epidemic.

It would seem therefore better, for the present at least, to leave the question of the fourth disease *sub judice* until the data collated can be relied upon to settle the matter once for all, and in the meantime to treat all mild scarlatiniform exanthems as scarlet fever.

It should, however, be borne in mind that the extended period of isolation imposed for scarlet fever is not arbitrarily fixed, but is due to the persistence of the desquamation. One is therefore at a loss to conceive the ability of scarlet fever to be further transmitted, once all desquamation has ceased and there are no other complications, such as nephritis, otitis, glandular suppuration, or catarrhal discharges, present.

Consequently the fears expressed in regard to the confusion of scarlet fever and Dukes's disease are more or less imaginary, as the persistence of the desquamation or the presence of catarrhal or purulent discharges will in true scarlet fever indicate the necessity for continued isolation, while in Dukes's disease the rapid disappearance of all symptoms, together with the customary speedy and complete *restitutio ad integrum*, will define with equal accuracy the time at which it is safe to discharge the patient from observation.

Offal-fed Hogs.

A practice that is almost universal at the small country slaughter-houses is that of feeding the offal of butchered animals to hogs, that are usually kept within the same enclosure with the slaughter-house; aside from the serious objection to such practice because of the foul odors, flies, and general unsanitary surroundings, inseparable from such feeding, there is a much greater danger, which has been pointed out in a bulletin issued by the Bureau of Animal Industry, United States Department of Agriculture, under date of April 17, 1907, as follows:

"Trichinosis is a disease occurring in man and other animals as a result of eating flesh containing the living larvæ of a parasite, *Trichinella spiralis*, commonly known as trichinæ.

"These larvæ have been found encysted in the muscles of many different kinds of mammals, most frequently those of omnivorous or carnivorous habits. The occurrence of trichinæ in herbivorous mammals, or in those which do not normally eat meat, is very rare, and results only when, abandoning their usual food habits, or acci-

dentially, these animals eat meat which happens to be infested with the parasite, or when, as a matter of experiment, they are purposely fed such meat. From the standpoint of public health, the only animals which are of importance in this country as sources of infection and propagators of the disease are hogs and rats. Man becomes infected through eating trichinous pork; hogs become trichinous by eating the trichinous flesh of other hogs or of rats, and rats acquire the parasite by eating the flesh of trichinous hogs or by eating other rats which happen to be infested. *The country slaughter-houses, where hogs are commonly kept and fed on the offal of slaughtered animals, and where rats usually abound, are one of the most important factors, if not the most important, in the propagation of infection.*

The above is sufficient evidence to warrant the condemnation of the offal-fed hog, and it then would be possible to have the average country slaughter-house something better than a neighborhood nuisance.

The "specks" of flies that have fed on tuberculosis sputum have been found to contain as high as 5000 tubercle bacilli.

A Preservative Note.—It is said that a woman cannot keep a secret, even with the use of salicylic acid.

Conscience is the chart of the soul, the loss of which means destruction.—*Rev. S. S. Estey.*

Only small men cherish grudges.—*Rev. S. S. Estey.*

Sterling worth, like cream, comes to the top.

A TIP FOR THE YOUNG.

THIS is an age of most wonderful opportunities and possibilities for the young; greater and more wonderful than any gone before. In fact, opportunities are well-nigh reaching out to seize them, but the opportunity and the seizure, if effective, must be met half-way.

The seizure will be of those with integrity, industry, clear brains, and clean minds; those not ashamed or afraid to work with head or hands more than eight hours a day, or twice eight hours if necessary; who can be trusted to do their best without watching; who always give full measure, or more, without the asking.

On the other hand, there is little of promise for the one who studies least and strives little; who is afraid of doing too much or of working overtime; for the youth who thinks it manly to be a bar-room patron; to tax his brain for the coloring of a meerschaum pipe or who decorates his fingers with cigarette stains; who gives his evenings to pool-halls, or who argues that the world owes him a living. Such as these may exist, but they will not be *living*, in an age that, while having much to give, will also demand much.

—F. D. Coburn,
Topeka, Kan.

BULLETIN

OF THE

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No. 6.

JUNE, 1907.

VOL. 3.

Read the Labels.

Swat
The Fly
By Scattering
The Manure Pile.

The new Kansas Water
And Sewage Law is a Dinger!

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| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------------------------|--------------------|----------|-------------------|---------|------------------|---------|-------------------|---------|------------|---------|-------------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| The State... total, May, 1906 | 90 97 | 71 55 | 35 60 | 8 6 | 49 34 | 11 8 | 112 65 | 6 2 | 297 251 | 0 1 | 1416 154 | 19 2 |
| Allen | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 1 |
| Anderson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Atchison | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| † Barber | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Barton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Bourbon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brown | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Butler | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 |
| Chase | 1 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 30 | 0 | 4 | 0 |
| * Chautauqua | | | | | | | | | | | | |
| Cherokee | 4 | 4 | 1 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 19 | 1 |
| Cheyenne | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Clark | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 3 | 3 | 0 | 0 | 0 |
| Clay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| Cloud | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 25 | 0 |
| Coffey | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 153 | 0 |
| Comanche | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 |
| Cowley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 0 |
| Crawford | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| † Decatur | | | | | | | | | | | | |
| † Dickinson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Doniphan | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 55 | 2 |
| Douglas | 0 | 0 | 2 | 0 | 0 | 0 | 6 | 0 | 8 | 0 | 0 | 0 |
| Edwards | 0 | 0 | 2 | 0 | 0 | 0 | 6 | 0 | 8 | 0 | 0 | 0 |
| * Elk | | | | | | | | | | | | |
| Ellis | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | 1 |
| * Ellsworth | | | | | | | | | | | | |
| Finney | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 2 |
| Ford | 2 | 2 | 0 | 0 | 1 | 0 | 12 | 0 | 2 | 0 | 300 | 0 |
| Franklin | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Geary | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 100 | 0 |
| Graham | 3 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grant | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 |
| † Gray | | | | | | | | | | | | |
| * Greeley | | | | | | | | | | | | |
| Greenwood | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| † Hamilton | | | | | | | | | | | | |
| Harper | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 4 | 0 |
| Harvey | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| † Haskell | | | | | | | | | | | | |
| † Hodgeman | | | | | | | | | | | | |
| Jackson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| Jefferson | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 30 | 0 |
| * Jewell | | | | | | | | | | | | |
| Johnson | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 7 | 0 | 4 | 0 |
| Kearny | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kingman | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Kiowa | | | | | | | | | | | | |
| Labette | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 |
| Lane | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | | | | | | | | | | | | |
| Lincoln | 1 | 1 | 1 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| † Linn | | | | | | | | | | | | |
| † Logan | | | | | | | | | | | | |
| Lyon | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 40 | 0 |
| Marion | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Marshall | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 1 |
| * McPherson | | | | | | | | | | | | |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|-----------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Moede | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Miami | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| † Mitchell | 0 | 0 | 2 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 22 | 0 |
| Montgomery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 |
| * Morris | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Morton | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Nemaha | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Neosho | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Ness | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osborne | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 5 | 0 | 0 | 0 |
| * Ottawa | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| Pawnee | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 22 | 0 | 0 | 0 |
| † Phillips | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Pottawatomie | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 6 | 0 |
| Pratt | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| Rawlins | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 21 | 0 | 31 | 0 |
| Reno | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Republic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Rice | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 6 | 0 |
| Riley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Books | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Bush | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Russell | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Saline | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| Scott | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 3 | 0 |
| Sedgwick | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 7 | 0 |
| Seward | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| Shawnee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheridan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| Sherman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 22 | 1 |
| Smith | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 |
| Stafford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| † Stanton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Stevens | 1 | 2 | 0 | 0 | 0 | 0 | 10 | 1 | 12 | 0 | 4 | 0 |
| Sumner | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 |
| Thomas | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Trego | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Wabaunsee | 1 | 1 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wallace | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 30 | 0 |
| Wichita | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilson | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 15 | 0 |
| Woodson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Wyandotte | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 |
| Cities: | | | | | | | | | | | | |
| * Atchison | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| * Coffeyville | 16 | 14 | 4 | 1 | 7 | 4 | 5 | 0 | 9 | 0 | 136 | 9 |
| Kansas City | 4 | 4 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 21 | 0 |
| Leavenworth | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 |
| Parsons | 4 | 4 | 2 | 2 | 1 | 0 | 2 | 0 | 3 | 0 | 45 | 0 |
| * Topeka | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Wichita | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| State Institutions .. | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

Food and Drugs Law Catechism.

Continued from May BULLETIN.

Ques. Is it necessary to label per cent. of alcohol in prescriptions where there is no signature of physician; as, for example, from a copied prescription?

Ans. Yes.

Q. How are we to dispose of such medicines as Mull's Grape Tonic, where the manufacturers are out of business? Must we destroy it and not sell?

A. Analyses will be made of such products and information given in this BULLETIN as to the kind of supplemental label to be attached to make the sale legal after the 1st of October.

Q. If an article is pure, is it necessary so to state on the label?

A. No.

Q. What shall be the attitude of the physician and druggist to the newspaper that allows the gross misrepresentations of advertisers to create a demand for spurious stuff?

A. This is an ethical problem which does not come under the jurisdiction of the Kansas food and drugs law.

Q. Does this law have anything to say on short-weight packages or bottles?

A. If a statement of weight or measure is made, it must be the true net weight or measure.

Q. What should be looked out for in patent preparations that are covered by the Kansas law and not by the national law?

A. Both laws are identical so far as patent preparations are concerned.

Q. How shall I label antikamnia and combinations, knowing them to be acetanilid preparations?

A. The amount of acetanilid or any of the narcotic drugs must be stated upon the label, expressed in grains per tablet.

Q. Will it be a violation of the law to refill a bottle with United States Pharmacopœia preparation which has on it another druggist's label, or must we relabel all sales?

A. The druggist making the sale should put his own label on the preparation.

Q. Can a druggist fill a family receipt for liniment without stating the amount of alcohol in such liniment?

A. No, unless all the ingredients are official preparations, in which event the names of the preparations and the amounts of each

may appear upon the label, when it will then not be necessary to state the alcoholic contents.

Q. Can we put up a corn cure containing cannabis indica without the label stating the presence of this medicine?

A. No, unless you put up the corn collodion mentioned in the National Formulary, and sell it as such, in which event the official name given therein will be sufficient to appear on the label.

Q. To what do you attribute the ptomaine poisoning in ice-cream?

A. Ptomaine poisoning in ice-cream may result from a number of different things, chief of which may be mentioned improperly cleansed freezers and worked over or refrozen cream that had sufficient age as to undergo the process of fermentation or deterioration.

Q. How shall oils be labeled to comply with the new law which now come from the wholesaler labeled imitation?

A. They should be labeled "imitation."

Q. Can I serve canned fruit and sardines in my restaurant that are not labeled?

A. Yes.

Q. What vegetables could be displayed on sidewalks?

A. Those that are peeled, pared or cooked before ready for consumption.

Q. What relations do newspapers have to the law that advertise Peruna, etc., as a cure-all?

A. None.

Q. Does the law apply to hotels in regard to inspection of them?

A. Yes, to that portion of the hotel where foods are stored or prepared.

Q. Are we allowed to sell French peas, which are labeled "colored with sulfate of copper," and guaranteed by jobber on invoice to meet the requirements of the law, federal and state?

A. No, the use or sale of sulfate of copper in food products in Kansas is prohibited.

Q. Will you kindly inform me if malted vinegars that are manufactured from grains are as pure and wholesome to use as pure apple-cider vinegars are?

A. Yes.

Q. Is a grocer liable in selling a flour that is marked "pure buckwheat flour" and does not contain a particle of that cereal?

A. Yes.

Q. May a grocer place his written label on an article if he knows the constituents?

A. Yes.

Q. Would the manufacture and sale of a lice cure come under the food and drugs law?

A. Yes, because such a remedy is necessarily applied to the person or animal in order to be effective.

Q. How will the law apply to grocerymen having on hand a stock of patent medicines?

A. The same as to the druggists.

Q. Have farmers and dairymen a right to use butter color in the butter they make and sell to the merchants?

A. Yes, if it is a harmless color.

Q. If the jobber from whom the merchant buys goods guarantees everything under the Kansas food and drugs law, does this release the merchant?

A. Yes.

Bacilli from Tuberculous Cows in Human Food.

Bulletin No. 93, United States Department of Agriculture, is devoted to a most timely article entitled "Tuberculous Lesions and Mode of Infection." The conclusions arrived at are based on extensive experimentation of the Bureau of Animal Industry, and are confirmatory of the trend of scientific opinion, which hitherto has been guardedly expressed the past several years. We are convinced, with the author, that the campaign against tuberculosis will not be successful until the tuberculous dairy-cow has been put out of business. We quote from the bulletin as follows:

"Although authorities are not in accord on the intertransmissibility of human and bovine tuberculosis, we feel that it is necessary to call attention to one way in which tubercle bacilli, scattered by tuberculous cattle, are undoubtedly often introduced into human food.

"Tuberculosis of men and cattle was universally regarded as etiologically the same affection, until Dr. Theobald Smith, of America, pointed out a morphological difference between tubercle bacilli isolated from human and bovine lesions, and Dr. Robert Koch, of Germany, later on, characterized bovine tuberculosis as a disease that could be almost, if not entirely, ignored as a source of infection dangerous to man. Opposed to the view of Doctor Smith is the frequent isolation of bacilli from human tuberculous lesions that are morphologically of the bovine type. This circumstance may be interpreted to mean one of two things—either that persons

who succumb to tuberculosis due to bacilli of the so-called bovine type were infected from cattle, or that the difference between the so-called human and bovine types has a significance similar to that of the morphological variation common with most bacteria.

"Doctor Koch's assertion that cattle tuberculosis is a negligible quantity in the measures that must be taken for the preservation of human health is based largely, if not wholly, on negative evidence, or, strictly speaking, no evidence at all. He, as well as many other investigators, found that it was difficult to induce tuberculosis in cattle by exposing them to, or injecting them with tubercle bacilli obtained from human sources, and concluded from this that man was equally resistant to tubercle bacilli obtained from bovine sources. The premise does not justify the conclusion, and the mass of circumstantial evidence that is contrary to its acceptance is extremely voluminous and convincing.

"Many tubercle bacilli have been isolated from human lesions that are more infectious for cattle than many tubercle bacilli isolated from bovine lesions, and it is now pretty generally admitted that tubercle bacilli from bovine sources, as a rule, have a higher virulence than tubercle bacilli from human sources for all animals with which they have been tested. The animals tested include several species of the quadrumania, which are certainly much nearer to man, anatomically and physiologically, than to cattle.

"It would be curious indeed if man were an exception to a rule that has been found by conclusive tests to be applicable to the animal nature of all the species of the mammalian kingdom to which man belongs. To establish definitely that one species is an exception to a condition that is true of all the tried species of a great kingdom should require preponderating evidence, and cannot be settled with negative evidence or a simple process of reasoning from analogy. In fact, it is not a process of reasoning at all with which we are dealing; it is a simple assumption to say that a being which is ordinarily affected with a weaker virus of a special kind is immune against the stronger virus usually found in connection with another being, simply because the being with the stronger is to some extent immune against the weaker virus.

"The commonly lower virulence of tubercle bacilli from human lesions may be due in part to the comparatively greater care bestowed on sick persons, and the general treatment, medical and other kind, that they receive, which prolongs their lives and the duration of the affection, and consequently exposes the virus to possible modifying influences of a biologic order. This seems more probable

since it has been shown that the disease has the elements of a self-limited affection, by the fact that it is possible to induce an immunity against tuberculosis by the injection of tubercle bacilli of a virulence too low to cause a progressive tuberculosis.

"But we do not wish to enter into a long argument on this question, and must return to the subject of tubercle bacilli from cattle that may enter human food. We believe that we have said enough to show that it is desirable in every sense of the word to protect our health against tuberculous infection from cattle, and to know through what channel it may reach us. We are compelled to maintain this view, though it is opposed to the opinion of Doctor Koch, of the inestimable value of whose general work on tuberculosis we have the highest appreciation, and sincerely feel and believe that it gives him the rank of a public benefactor of the first order.

"It has been shown by our work at the experiment station during the past year, an account of which will be published in a separate article, that the main channel through which tubercle bacilli leave the bodies of tuberculous cattle is the rectum, and that feces may be regarded as a parallel substance with cattle to sputa with man in the dissemination of tubercle bacilli. This was demonstrated through microscopic examinations and inoculation tests with small animals.

"The feces not only of cattle affected with advanced tuberculosis, but also of a large percentage of those so slightly affected that their tuberculous condition was not suspected until they had been tested with tuberculin, were found to contain a sufficient number of microscopically discoverable tubercle bacilli to equal many millions in the total mass of feces passed by a single cow each day. The bacilli were found to be evenly distributed in the feces, which is fairly good evidence that they had passed through the greater portion, probably the entire length, of the digestive tract. This even distribution was similar to that of the bacilli in the feces of healthy cattle that were given water to drink to which tubercle bacilli had been intentionally added. That the bacilli were virulent was proved by causing tuberculosis to develop in guinea-pigs by inoculating them with feces and with milk soiled with feces from naturally tuberculous cows, as well as from the healthy cows that drank water to which tubercle cultures had been added.

"Now, if many millions of tubercle bacilli are commonly passed by tuberculous cows, evenly distributed in their feces, which we have definitely convinced ourselves to be the case, it is not difficult to see that, because of the intensely infected environment of tuber-

oulous cattle, it is no easy matter to obtain milk at all times free from tubercle bacilli. How easily feces, and with them tubercle bacilli, may be introduced into the milk-pail, no one who has witnessed the milking of cows need be told.

“CONCLUSIONS.

“(1). We believe that we have shown that systematic investigation is gradually retiring the inhalation theory that has long been used to explain the frequency with which tuberculosis is a pulmonary disease, and that the ingestion of tubercle bacilli is being proved to be the real method through which tuberculous infection reaches the lung, as well as other organs of the body. When substance of dissimilar specific gravity move at the same rate of speed under similar conditions, it is a physical fact that the force required to change their direction is proportionately greater as the specific gravity increases. If the substances of dissimilar specific gravity are air and dust and the change of direction is due to movement through the far-from-straight, moist-walled passages from the nasal openings, or even the mouth, to the lung, the dust will be thrown at every turn, because of its greater specific gravity, against the walls of the air-passages, to which it will adhere because they are moist, and the ciliated epithelium with which the respiratory passages are lined will tend to move the adherent particles outward and not inward. It is, hence (excepting, possibly, with extremely forcible inspiratory movement in a dust-saturated atmosphere), almost a physical impossibility for dust particles to penetrate with the air into the lung. If no other argument than this could be brought to bear against the inhalation theory of pulmonary tuberculosis—and it applies with equal force against inhalation of other infectious material, including the micro-organisms of pneumonia—it would be sufficient to condemn it.

“(2). Not only is the inhalation theory dying and making room for the fact that ingestion is the true mode of infection with tuberculosis, but the theory that dust from pulverized sputa is the most important factor in the transmission of tuberculosis from subject to subject is gradually losing ground also, and giving way to the conviction that fresh tuberculous material must be looked to as the true agent through which infection occurs.

“(3). While many cases of tuberculosis undoubtedly have their origin through food directly or indirectly infected with fresh tuberculous material by tuberculous persons, there is no means to-day by which persons are brought into closer contact with fresh tuberculous material than milk and dairy products obtained from, and in

the environment of, tuberculous cows. The wide use of milk, its rapid distribution because of its perishable character, the ease with which it may be contaminated by having tubercle-bacilli-laden feces splashed, sprayed, switched or otherwise introduced into it in a fresh state, all speak for one conclusion, namely: *That we have no more active agent than the tuberculous cow for the increase of tuberculosis among animals and its persistence among men.*

"SUMMARY OF THE CONCLUSIONS.

"The main facts are as follows:

"(a). Tuberculosis is a disease contracted through the ingestion of tubercle bacilli.

"(b). The lung is the most frequent organ affected, independently of the point at which the infectious material enters the body.

"(c). Tuberculous infection may pass from one part of the body to another remote to it without leaving a chain of lesions to mark its path.

"(d). Fresh tuberculous material has the highest, and dried and pulverized material a doubtful, significance.

"(e). Tuberculous material from cattle has the highest virulence for all tested species of the mammalian kingdom, to which man anatomically and physiologically belongs, and tuberculous material from man has a lower virulence.

"(f). Man is constantly exposed to fresh tuberculous material, in a helpless way, through his use of dairy products from tuberculous cows and cows associated with tuberculous cattle.

"It seems from this array of facts, every one of which is based on positive experimental evidence, that we should feel no doubt regarding our plain duty, which is, no matter what other measures we adopt in our fight against tuberculosis, not to neglect one of the chief, if not the most important, source of infection — *the tuberculous dairy cow.*"

Kansas Bake-shop Requirements.

1. Rooms in which the dough is mixed and the pastries prepared for baking must be well ventilated, with good supply of fresh air and light. Walls, ceilings, floors, proof boxes, pans, kneading-trough and machines must be kept in a clean and wholesome condition. Closets and lavatories must not be directly connected with the working rooms, and sewerage pipes must not be led through them.

2. Before beginning work and before preparing and mixing the ingredients, the persons engaged in the work must wash their hands and arms thoroughly in clean water. For this purpose sufficient wash-basins, together with soap and clean towels, must be provided.

3. Persons employed in the establishment must, while working, wear sufficient clothing.

4. Persons having contagious or loathsome diseases must not be employed in bakeries.

5. All windows and doors must be protected from flies.

6. The supplies of flour must be stored in dry places, where they are protected from all contamination. Kneading or working the dough with the feet is strictly forbidden. Water used to coat the bread must be provided fresh every day. The bread and pastry must not be laid on the bare floor.

7. It is strictly forbidden to sit or lie on any of the tables, shelves, etc., which are intended for use for the dough or baked articles. Chairs and benches in sufficient number must be provided to sit on.

8. The working rooms must be furnished with cuspidors, at least one in each room, which must be cleaned daily. Spitting on the floor is forbidden. Smoking, snuffing, chewing of tobacco, etc., is forbidden in the working rooms while work is in progress.

9. The working rooms must not be used for any purposes other than those strictly connected with the preparing and baking of foods; especially must they not be used as washing-, sleeping- or living-rooms.

10. Domestic animals must not be kept in the bake shop.

11. All barrels, boxes, tubs, pails, casks, kneading-troughs, machines or other receptacles containing food preparations must be kept covered, protecting same from contamination.

Formalin as a Powerful Preservative of Milk.

By WILLIAM L. MOODIE, Lawrence, Kan.

It is a well-known fact that the usual changes which occur in milk are due to bacterial action of some kind. Until the Kansas food and drugs law went into effect it was the practice for dairymen in some localities to use preservatives of high antiseptic power in order to keep the milk long enough to market it. Formalin has been used for this purpose to a great extent, and yet its high antiseptic power was little known to those who handled it.

The following experiments carried on in the bacteriological de-

partment of the University of Kansas show well the high antiseptic power of formalin as a preservative. Fresh milk was taken and litmus was added to it until the milk took on a decided blue color, so that the least change towards souring was noted by the pink coloration of the litmus milk. The milk was then put in 100 cc. sterile flasks, 99 cc. of milk to each flask, after which 1 cc. of dilute formalin was added. The dilution of the formalin was made in sterile flasks with sterile water: First, 1 cc. of formalin was added to 199 cc. of sterile water, giving a dilution of 1-200 (a). Then 1 cc. of (a) was added to 99 cc. of sterile water in another flask, giving a dilution of 1-20,000 (b). Further dilutions were made in the litmus milk. The following table may help to a better understanding of the exact method used in making the dilutions:

| Commercial formalin. | Sterile water. | Approximate per cent. of formaldehyde gas. | Per cent. of solution formalin and water. |
|------------------------------|----------------------|--------------------------------------------|-------------------------------------------|
| (a) { 1 c.c. added to..... | 199 c.c. | = 1/500 | = 1/200 |
| 1 " " | 99 | = 1/50,000 | = 1/20,000 (b) |
| 1 c.c. added to..... | 99 | = 1/5,000,000 | = 1/2,000,000 (b) |
| (b) { 1/2 c.c. added to..... | MILK. 99 1/2 c.c. | = 1/250,000,000 | = 1/100,000,000 |
| 1/2 " " | 99 1/2 | = 1/250,000,000,000 | = 1/1,000,000,000 |

The experiments were performed five times, similar results having been obtained each time, as shown by the following tables:

| Temperature of room. | Per cent. of Formalin. | Per cent. of formaldehyde gas. | Quantity of milk. | Time of preservation after adding formalin. Days. Hours. |
|------------------------------------------------------------|------------------------|--------------------------------|-------------------|-------------------------------------------------------------|
| No. 1.—Whole milk, two hours old, obtained March 20, 1907. | | | | |
| 19°-21° C.. | 1/10,000 | 1/249,900 | 9 c.c. | 23 |
| | 1/100,000 | 1/2,499,000 | 9 | 12 1/2 |
| | 1/10,000,000 | 1/24,990,000 | 9 | 80 |
| | 1/100,000,000 | 1/249,900,000 | 9 | 58 |
| | 1/1,000,000,000 | 1/2,499,000,000 | 9 | 48 |
| | Check..... | ..... | 10 | 24 |
|  | " ..... | ..... | 10 | 24 |
| No. 2.—Whole milk, two hours old, obtained April 2, 1907. | | | | |
| 19°-21° C.. | 1/20,000 | 1/250,000 | 99 c.c. | 5 1/2 |
| | 1/2,000,000 | 1/25,000,000 | 99 | 3 1/2 |
| | 1/100,000,000 | 1/250,000,000 | 99 | 70 |
| | 1/1,000,000,000 | 1/25,000,000,000 | 99 | 47 |
| | Check..... | ..... | 100 | 24 |
|  | " ..... | ..... | 100 | 24 |

No. 3.—Separated milk, two hours old, obtained April 4, 1907.

| | | | | | |
|-------------|-----------------|---------------|---------|------|----|
| 19°-21° C.. | 1/100,000,000 | Not detected, | 99 c.c. | .... | 68 |
| | 1/1,000,000,000 | “ “ | 99 | .... | 56 |
| | Check..... | | 100 | .... | 24 |
| | “ | | 100 | .... | 24 |
| | “ | | 100 | .... | 24 |

No. 4.—Separated milk, two hours old, obtained April 6, 1907.

| | | | | | |
|-------------|-----------------|------------------|---------|------|----|
| 18°-21° C.. | 1/100,000,000 | 1/2,500,000,000 | 99 c.c. | .... | 52 |
| | 1/100,000,000 | 1/2,500,000,000 | 99 | .... | 52 |
| | 1/1,000,000,000 | 1/25,000,000,000 | 99 | .... | 32 |
| | 1/1,000,000,000 | 1/25,000,000,000 | 99 | .... | 32 |
| | Check..... | | 100 | .... | 24 |

No. 5.—Dairy milk, seven to eight hours old, obtained April 18, 1907.

| | | | | | |
|-------------|-----------------|-----------------|--------------|------|------|
| 19°-21° C.. | 1/20,000 | 1/250,000 | 99 c.c. | 2½ | .... |
| | 1/2,000,000 | 1/25,000,000 | 99 | 1½ | .... |
| | 1/100,000,000 | 1/250,000,000 | 99 | .... | 32 |
| | 1/1,000,000,000 | 1/2,500,000,000 | 99 | .... | 28 |
| | MINUS FORMALIN. | | LITMUS MILK. | | |
| | Check..... | | 100 c.c. | .... | 24 |
| | “ | | 100 | .... | 24 |
| | “ | | 100 | .... | 24 |
| | “ | | 100 | .... | 24 |
| | “ | | 100 | .... | 24 |

Prof. E. H. S. Bailey, of the chemistry department, University of Kansas, and also state chemist, made the test for formalin, using the hydrochloric-acid test. He easily detected quantities of formalin in proportions of $1/100,000$. Quantities lower than this, as $1/1,000,000,000$, were not detected by the usual hydrochloric-acid test, although Professor Bailey succeeded in detecting $1/1,000,000,000$ by a distillation test, which is a much finer test than the hydrochloric-acid test. The tables show that $1/1,000,000,000$ of formalin, or $1/250,000,000,000$ of formaldehyde gas, preserves milk above its normal life (which is usually about twenty-four hours, plus or minus) from four to thirteen hours. This fact is of great importance, both in connection with the enforcement of our pure-food law and with formalin as a powerful preservative and antiseptic.

Care of the Refrigerator.

An important feature in the hygiene of the home, which is very frequently overlooked, even by most excellent housekeepers, is the regular and thorough cleansing of the refrigerator. While it is true that the usually low temperature of the refrigerator will prevent very rapid decomposition, it is none the less true that decomposition will occur, and drops of milk, fragments of meat and small pieces of food will undergo putrefaction, until the whole refrigerator is charged with thousands of putrefactive bacteria. The odor of the refrigerator may not be pronounced, but milk and other articles of food placed in such a refrigerator will spoil quickly, and will become unfit for consumption.

Milk from a foul refrigerator is especially dangerous to the sick or to infants, and it is doubtless true that many disturbances of digestion of babies arise from good milk which has become spoiled in the dirty ice-box.

Every refrigerator or ice-box which is in constant use should be thoroughly cleaned at least once a week. It would be better if it were cleaned thoroughly twice a week. All articles should be taken out, the lining should be scrubbed, and the shelves, if detachable, should be exposed to the sunlight. The corners and crevices of the ice-box should be given careful attention. The drain-pipe, carrying away the water from the melted ice, should be kept free constantly.

In placing milk or cream in the refrigerator, care should be taken that there is no leakage or dripping. Spoiled foods or tainted foods should never be kept in an ice-box with fresh foods.—*Illinois State Board of Health.*

A Jury's Verdict on Peruna.

Druggists in Syracuse, N. Y., were sued for selling Peruna without a saloon-keeper's license. The question whether Peruna was a medicine or just plain booze was put to the jury in the form of the following six questions. To each the jury's answer was "No":

Ques. 1. "Is the preparation contained in the five bottles of Peruna produced by the plaintiff, consisting of alcohol, water, and certain drugs, a proper remedy for the treatment and cure of Bright's disease? Ans. No.

Q. 2. "Is the preparation contained in the five bottles of Peruna produced by the plaintiff, consisting of alcohol, water, and certain drugs, a proper remedy for the treatment and cure of acute catarrh? A. No.

Q. 3. "Is the preparation contained in the five bottles of Peruna produced by the plaintiff, consisting of alcohol, water, and certain drugs, a proper remedy for the treatment and cure of chronic catarrh? A. No.

Q. 4. "Is the preparation contained in the five bottles of Peruna produced by the plaintiff, consisting of alcohol, water, and certain drugs, a proper remedy for the treatment and cure of diseases of the mucous membrane? A. No.

Q. 5. "Was the quantity of alcohol, twenty-six to twenty-seven per cent., contained in the preparation in question, necessary to hold the drugs actually put therein in solution? A. No.

Q. 6. "Was the quantity of drugs contained in one bottle of the alcohol diluted with water sufficient in amount, in tablespoonful doses three or four times a day, to produce any appreciable remedial effect? A. No."—*Collier's Weekly*.

KANSAS.

THE Giver of all Good never dowered a land with a richer heritage than that which He has lavished upon the Sunflower state, and the Omnipotent Artist never painted fairer skies than those overarching these pretty and prolific prairies.

The history of the state reads like a romance. Its original limits extend far into the Rockies. Pike's Peak was its rostrum. Coronado traversed its treeless plains in search of a fabulous field of gold, but found it not, although it was here. In its territorial days, Kansas was the initial battle-ground of the conflicting ideas of government which clashed at Sumter and climaxed at Appomattox. It was christened on the altar of self-sacrifice and baptized in the blood of patriotism.

Draw a line south and north, east and west, across the United States, and the lines will converge in the heart of Kansas. Kansas is the central state. It is the *rich, juicy meat in the national sandwich*.

Nowhere has advancing civilization crystallized into better government or flowered into a higher citizenship. Illiteracy has found its lowest percentage here, and crime its most meager statistics.

E. W. HOCH, *Governor of Kansas*.

BULLETIN

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No. 7.

JULY, 1907.

VOL. 3.

Keep your Head Cool
And your Heart Warm.

Eat moderately. Bathe often.
Drink water freely at moderate temperature.
Be content. Don't fret.

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VITAL STATISTICS

Reported to the Kansas Board of Health for June, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

[illegible]

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| Meade..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| *Miami..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Mitchell..... | 1 | 1 | 5 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 1 | 0 |
| Montgomery..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| *Morris..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 28 | 0 |
| Morton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Neosho..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Norton..... | | | | | | | | | | | | |
| Osage..... | | | | | | | | | | | | |
| *Osborne..... | | | | | | | | | | | | |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 50 | 1 |
| *Phillips..... | | | | | | | | | | | | |
| Pottawatomie..... | | | | | | | | | | | | |
| †Pratt..... | | | | | | | | | | | | |
| *Rawlins..... | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 14 | 0 | 0 | 0 |
| Reno..... | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 20 | 0 |
| Rice..... | | | | | | | | | | | | |
| *Riley..... | | | | | | | | | | | | |
| †Rooks..... | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Russell..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Saline..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Scott..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 |
| Sedgwick..... | | | | | | | | | | | | |
| †Seward..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Shawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 2 | 0 |
| Sheridan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 4 | 0 |
| Sherman..... | | | | | | | | | | | | |
| *Smith..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 |
| Stafford..... | | | | | | | | | | | | |
| †Stanton..... | | | | | | | | | | | | |
| †Stevens..... | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sumner..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Trego..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Wabaunsee..... | | | | | | | | | | | | |
| Wallace..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Washington..... | | | | | | | | | | | | |
| *Wichita..... | | | | | | | | | | | | |
| *Wilson..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Woodson..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 11 | 0 | 1 | 0 |
| Wyandotte..... | | | | | | | | | | | | |
| <i>Cities:</i> | | | | | | | | | | | | |
| *Atchison..... | | | | | | | | | | | | |
| *Coffeyville..... | | | | | | | | | | | | |
| Kansas City..... | 13 | 13 | 11 | 5 | 2 | 0 | 5 | 0 | 12 | 0 | 60 | 5 |
| Leavenworth..... | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 6 | 0 | 3 | 0 |
| Parsons..... | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 3 | 0 |
| Topeka..... | 2 | 2 | 0 | 0 | 4 | 0 | 1 | 0 | 3 | 0 | 3 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| State Institutions.. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 |

*No report.

†No contagious diseases in county.

‡No health officer.

FOOD ANALYSES, No. IX.

By J. T. WILLARD, Food Analyst for the Board.

MANHATTAN, KAN., June 25, 1907.

CHEESE.

It has been represented that the so-called full cream cheese on the market is considerably below the United States standard. With a view to ascertaining the condition of affairs, the samples of a number of cheeses on the market were secured through the courtesy of Mr. Roser. These have been analyzed in respect to the percentage of water and of fat, with the results shown in the following table:

| Number. | Brand. | Water. | Total solids. | Fat. | Fat in total solids. |
|---------|----------------------------|--------|---------------|--------|----------------------|
| 12088 | Wisconsin Brick Full Cream | 34.68% | 65.32% | 32.70% | 50.07% |
| 12089 | Kansas Full Cream | 35.60 | 64.40 | 34.50 | 53.57 |
| 12090 | Limburger | 44.28 | 55.72 | 30.00 | 53.86 |
| 12091 | Wisconsin Full Cream | 34.26 | 65.74 | 34.95 | 53.16 |
| 12092 | New York State Full Cream | 34.07 | 65.93 | 32.55 | 49.37 |
| 12093 | Swiss Domestic Block | 32.19 | 67.81 | 31.80 | 46.89 |

As the above analyses were taken to obtain an indication of the condition of the market, the report is not accompanied by data concerning the origin of the samples. The standards for cheese promulgated by the secretary of agriculture are as follows:

1. Cheese is the sound, solid and ripened product made from milk or cream, by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning, and contains, in the water-free substance, not less than fifty (50) per cent. of milk fat. By act of Congress, approved June 6, 1896, cheese may also contain added coloring-matter.

2. Skim-milk cheese is the sound, solid and ripened product, made from skim-milk by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning.

3. Goat's-milk cheese, ewe's-milk cheese, etc., are the sound, ripened products made from the milks of the animals specified by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning.

It will be noted that the fifty per cent. of milk-fat required in cheese is fifty per cent. of the water-free substance, not fifty per cent. of the cheese in its market state. Inspection of the preceding table shows that of the six samples, four had fifty per cent. or more of fat in the total solids, one of the other two was only a

shade below fifty, and the last only was materially deficient. In the manufacture of cheese, most of the sugar of the milk is eliminated, either in the whey or by subsequent fermentation. A portion of the salts is also lost. The cheese, therefore, consists essentially of fat and protein. As given by Wiley, the mean composition of cow's milk, as determined by recent analyses, is: water 86.9, sugar 4.8, proteids 3.6, fat 4.0, ash 0.7 per cent. It will be seen that the fat is about one-tenth greater in amount than the proteids. The fifty-per-cent.-fat standard for the dry substance of cheese would therefore allow a ten-per-cent. margin for ash, sugar, etc., at present. This may seem rather small, but the results given above indicate that the cheeses on the market reach the standard for the most part.

Food and Drug Decisions.

The following important rulings have been made by the committee on food and drugs of the Kansas State Board of Health:

Compound products that are labeled as containing maple syrup and cane syrup, in which the parts or per cents. are not expressed, must contain at least fifty per cent. of maple syrup in the product. Any deviation below this amount must be expressed in parts or per cent.

The use of commercial or wood acetic acid in the manufacture of vinegar is absolutely prohibited.

Dried or evaporated fruits that have been artificially bleached or preserved by passing through the fumes of burning sulfur must be branded on each package sold by wholesale, "Sulfur-bleached."

Chewing-gum is a confection, and is therefore subject to the same requirements as those of candies and other confectionery.

Jersey Cream Soda, as applied to pop, which is now a proprietary soda sold within the state, is an illegal name.

The use of any kind of preservative, either by direct contact, by mixing with or by absorbing the fumes of any gas, is absolutely prohibited in meat products.

The use of saccharin in food or drink products is absolutely prohibited.

Oils that are labeled "sweet oil" must be olive oil. That which is cottonseed oil will not be permitted to be sold as sweet oil, unless specifically designated as being cottonseed oil.

The manufacture or sale of food products colored with sulfate of copper is prohibited.

Circular Letter to County and Municipal Health Officers.

For the information of county commissioners, who by law are the county boards of health, the county superintendents of public instruction, and the public in general, the following letters, which have been issued to county and municipal health officers, are herewith submitted :

TOPEKA, KAN., April 29, 1907.

GENTLEMEN: We are enclosing you herewith our pamphlet containing the revised rules and regulations of the State Board of Health, and general health laws, including those passed at the last session of the legislature. You should familiarize yourself with these revised rules and regulations and the new laws relating to public health. I desire to particularly call your attention to the resolutions of the Board as found on page 23 on fumigation of school-houses, disinfection after typhoid fever and consumption, and inspection of slaughter-houses.

The law provides that health officers shall put into execution the orders of the State Board of Health, and provides a penalty for refusal or neglect to do so. We trust that these orders may be fully and literally put into execution.

We also desire to call your attention to the new nuisance law, as found on page 27. Hitherto local boards of health had very little authority or power in regard to abatement of nuisances. Under this law you have ample authority for the abatement of such nuisances as are found to be inimical to the public health.

I desire also to call your attention to rule 9, which defines a sanitary slaughter-house, and to rule 11, which is self-explanatory.

The control of many of the infectious diseases, particularly that of typhoid fever, will never be accomplished until the house-fly is put out of business; and, while we may not expect in this generation to accomplish that much desired result, we can make a good beginning and start the propaganda of education along this line, which will ultimately, no doubt, bear fruit.

Enclosed find also a copy of the pure food and drugs law, and the rules and regulations governing the same, together with other miscellaneous laws bearing on this subject.

Attention is directed to regulation 32, in which local health officers have a duty to perform in the sanitation of places and things where food-products are manufactured, stored, sold, or offered for sale.

The slaughter-houses and meat-markets should receive frequent attention, in order that they may be required to be kept in a sanitary condition.

Trusting for your hearty cooperation in these sanitary and preventive measures, I am,

Sincerely yours, S. J. CRUMBINE, M. D., *Secretary*.

TOPEKA, KAN., June 21, 1907.

To the County Health Officer:

Herewith find enclosed notices to be handed or mailed to the owners of every slaughter-house in your county. If you have not yet made a personal inspection of the slaughter-houses required by the order of the Board, I trust that you will do so immediately, using the occasion for serving a personal notice upon each owner by handing them one of these signed notices.

I would be glad to have a definite report from you as to the conditions found in your county, with the name and address of each owner of a slaughter-house. I am anxious to have a corrected list of all such places in the state. I trust that you will not fail me in this important matter.

I desire to again remind you of the annual fumigation of school-houses within your county, and to the duty of county health officers under regulation 32 of the food and drugs law.

The annual meeting of county health officers with the State Board of Health will be held some time in November of this year. It was thought that we would have a larger attendance at that time. It is proposed to have the presence of some distinguished gentlemen who will speak on food and drug adulteration and on municipal water-supply and sewage and sewage disposal. These questions, together with certain other sanitary problems and addresses on preventative medicines, will insure a pleasant and profitable session. It is suggested in the meantime that the matter be presented to the county board of health, and that they be requested to send a representative, preferably the county health officer, to this the fourth annual conference.

Very truly yours,
S. J. CRUMBINE, M. D., *Secretary*.

NOTE.—Mr. A. H. Roby, drug inspector of the State Board of Health, resigned June 22, and Mr. J. F. Tilford, of Olathe, has been elected in his stead.

Food and Drugs Law Catechism.

Continued from June BULLETIN.

Ques. Will we be required to label family recipes and veterinary recipes, showing content of alcohol, opium, etc.?

Ans. Upon family and veterinary recipes you will, but veterinary prescriptions written by a licensed practitioner are exempt.

Q. Is a patent labeled "Rheumatic Cure," which is guaranteed to do as claimed or money refunded, misbranded?

A. Yes; the offer to return money will not correct a misstatement, or give immunity to those who make false statement from the penalties of the law.

Q. Where fountain syrups are bought under pure-food guarantee, does the fact require an announcement at the fountain?

A. As already indicated, the department is not concerned with the guarantee. It is a personal matter between the jobbers and the manufacturers.

Q. Do such things as sulfur, salts (Epsom), copperas, blue vitriol, etc., require a guarantee when sold at retail in five-cent quantities?

A. No guarantees are required by law.

Q. Is it within the province of the pure-food committee to inspect drugs and chemicals in doctors' offices, and to prosecute when they are dispensing to patients drugs that are misbranded or adulterated?

A. If the physician is simply prescribing to his regular patients, I do not think so. Physicians who are selling drugs on call of the people in the same manner as the druggist are subject to inspection.

Q. Do packages of one dozen, when broken, each have to have a label?

A. Yes, each package should have a separate label.

Q. What is the result when patent medicine is guaranteed to cure? How about it when you refund money? Does the guarantee under the national law by wholesalers hold good under state law?

A. I think we have already answered the first question. If you mean it gives immunity under the Kansas law, I will say, no, it does not. I am sure that any personal guarantee you may have with your jobber will be all right. The national law does not give you immunity under the Kansas law.

Q. How may we know whether the labels of nostrums tell the truth?

A. When they begin to say that they cure everything under the sun, you may know it is not true. You may not always be able to tell, but you will probably not be held responsible for something you are in ignorance of.

Q. Who is the loser of a F. E. that the druggist buys and opens and finds below standard?

A. I think the manufacturers of the fluid extracts, the ones guaranteeing them. If there is no guarantee, the retailer would be the loser.

Q. Is October 1st set by law, or simply a ruling of the Board for labeling?

A. The law says that supplementary labels shall be required at once, and October 1st is the time set by law at which the original label must obtain.

Q. Shall we label all U. S. P. preparations after the new nomenclature, thus, carbolic acid, or phenol, extract witch-hazel, or *Hamamelis* water?

A. Common names that are understood by the people should be used.

Q. When a preparation is transferred to the shop bottle from the container in which it comes from the wholesaler, will it be necessary to have the label of the manufacturer on the shop bottle?

A. Yes; a copy of the original label should follow the transfer.

Q. How will Harlem oil be sold after October 1?

A. That has been sold as Harlem oil so long, I think it can continue to sell as such.

Q. What will the druggist do with the large stock of pharmaceutical preparations in stock October 1 that do not conform to required labeling?

A. I believe I have already indicated that they should get in communication with the manufacturers, and I have no doubt that new labels will be furnished those preparations that are required to be changed.

Q. Is oil of sweet almonds misbranded when labeled "made from peach seeds"? If tincture of opium purchased from a wholesaler is transferred to the stock bottle, does not the wholesaler lose his liability for quality, even if it was guaranteed by him originally?

A. Yes. Goods taken out of the original package and put into another bottle lose their identity under the guarantee provision of the law.

Q. On non-secret stock, does a rubber stamp "prepared for" comply with the law?

A. Yes.

Q. Would a sign something like this comply with the law: "The syrups and fruits used at this fountain are prepared in compliance with the pure-food law, and none of them contain more than one-fourth of one per cent. of benzoate of soda, and ether and vegetable or carmine coloring matter?"

A. I am inclined to think that would answer the purpose. Until further notice I would say yes.

Q. What kind of labeling is required on extracts such as lemon, vanilla, etc., where same are not prepared in accordance with U. S. P.? Is formula "U. S. P. 1880, 1870, etc.," or "National Formula Edition," sufficient labeling?

A. Flavoring extracts that do not comply with the standards of requirements, but are made from the articles enumerated in the standards, simply of substandard strength, should be called "flavors" instead of extracts. If, however, these flavors are artificial or imitation products, they should be labeled "imitation flavor" of so and so, and if artificial color is added, its presence should be declared on the label.

Q. Is the use of preserved fruit for soda-fountain use containing one-fourth of one per cent. of benzoate of soda permissible?

A. Yes, if the container of such fruit is labeled declaring the presence of such preservative and the amount used.

Q. Will patents on hand January 1, 1907, be taken for examination, and will they have to be relabeled, or will they have to be destroyed after October 1, 1907?

A. Such patents will not be taken for examination. They should be relabeled in such cases where the label is not in compliance with the law. They will not be destroyed, although if not relabeled in accordance with the law by October 1, 1907, their sale would be illegal.

Q. Are Kansas law requirements as to labels the same as the national law?

A. Yes.

Q. Are there any standards of quality required in a pure maple syrup?

A. Yes; the standards of quality as promulgated by the United States Department of Agriculture.

Q. Is baking-powder a food product?

A. Yes; under the definition of the Kansas law articles used in the preparation of food are defined as food.

Q. Who is to furnish stickers for old goods on hand?

A. Presumably the manufacturer.

- Q. What per cent. of butter-fat should whole milk contain?
A. Three and one-fourth.
- Q. Does the word "lard," not specified as pure lard, mean the rendered fat of hogs only?
A. Yes.
- Q. Does not the Kansas law rule against the presence of benzoate of soda?
A. No, provided it is stated on the label.
- Q. Will a guarantee printed on the wholesaler's invoice protect the retailer?
A. Yes, if in proper legal form.
- Q. Is the use of icing, "freezum," etc., in pork sausage forbidden?
A. Yes.
- Q. Should bananas be sold as a food product under the pure-food laws?
A. Yes.
- Q. Does a grocer lay himself liable when he sells you a bottle of vanilla when such bottle contains no vanilla as a matter of fact?
A. Yes.
- Q. What effect will this law have on old soldiers who sell medicines which they prepare themselves?
A. They are subject to the provisions of the law the same as anyone else.
- Q. Will this law prevent the use of cigarettes, cigars and pipes by bakers, butchers and cooks while preparing food in their respective places?
A. Yes.

Water and Sewage Law.

At the first quarterly meeting of the State Board of Health, held July 2, 1907, the following applications for the construction of sewage systems were presented, and permission granted to discharge sewage into the natural waters of the state: To Caney, sewage to be discharged into Little Caney river; Larned, sewage to be discharged into Pawnee creek or Arkansas river; to the A. T. & S. F. railway company, at Topeka, to discharge partially-treated sewage into Shunganunga creek.

Additional sources of water-supply were granted to Kingman and Ellsworth.

Quite a number of applications for the construction of new water-plant systems and the building of sanitary sewers are on file

in this office, and are receiving the attention of the sanitary adviser and engineer. Much valuable information has been elicited from the information on file in this office required under the new water and sewage law. Incidentally, it is discovered that in some of the cities the sources of water-supply are not what they should be, and that many of the filtration devices are entirely inadequate and ineffective. It is hoped that these conditions may be corrected upon the defects being pointed out to the proper authorities. Bacteriological examinations have been made of the various water-supplies throughout the state, which, in addition to the sanitary survey and the detailed information already on file, will be of inestimable value to this department and to the citizens of the various municipalities.

The following rules governing the examination of private water-supplies at the laboratories have been adopted :

I. A person desiring the analysis of a private water-supply must make application, stating the reasons for such request fully and explicitly.

II. No water will be examined simply to satisfy the curiosity of any one, or to substantiate a belief that the water is of good quality. There must be some valid reason given.

III. Examinations will be made :

1. If there is sickness or ill-health among persons using water, of a character that might reasonably be charged to its use.

2. If the appearance of the water indicates contamination.

3. If it has an unnatural taste.

4. If it has an unusual odor.

5. If it is abnormally colored.

6. If the attending physician or the local board of health requests an analysis.

7. If it is desired to ascertain if water received through lead pipe contains an amount of lead that would render it unfit for domestic use.

8. If it is wanted to ascertain if the water in an old, abandoned well, which it is proposed to reopen, is suitable for family use.

9. If for any other cause which may be deemed sufficient by the State Board of Health to warrant an analysis.

What a Water Analysis Is.

The question of the sanitary condition of a water-supply, whether public or private, is one the importance of which cannot be overestimated. It becomes the duty of the water analyst to decide as to the safety or danger attending the use of a supply, basing his judgment upon as extended knowledge as it is possible for him to obtain of the location of the river, lake, reservoir, well, or spring, and the conditions which exist on the watershed of the same, and upon the results which he obtains in the laboratory after submitting the sample of water to a series of chemical and bacteriological tests. If he sends to the layman a report of the water analysis, simply giving the figures obtained from his tests, he is very apt to receive a reply asking for the result of the analysis in "plain English," and it is with the idea of making a water analysis a little less mysterious that this article is written.

A sanitary water analysis is usually made up of the following tests: An inspection of the sample for its appearance as to turbidity, sediment, and color as read upon a definite standard; the odor of the water, cold and after heating nearly to boiling; a determination of the total solids; the matter volatile from this residue when heated to dull redness, and by subtracting this from the total solids, the fixed solids so called; a determination of the soap hardness, as measured by shaking a definite volume of the water with a standard soap solution; and a determination of the alkalinity of the water by titration with standard acid.

These determinations are in a measure general, or pertain principally to the mineral contents of the water. The tests which are about to be named are of more value in studying the sanitary condition of the water, and are as follows: Oxygen consumed, a chlorin determination, free and albuminoid ammonia, and nitrites and nitrates. The oxygen-consumed figure is a measure of the organic contents of the water and, as the name implies, represents the oxygen-consuming power of the water. The chlorin determination is of value as an index of pollution, inasmuch as a water from any given locality should naturally contain a certain amount of chlorin for that district. Chlorin is one constituent of common salt, and this figure increases with proximity to the sea, and for certain sections of the country has been pretty definitely determined, so that the chlorin result as obtained from any analysis can be com-

pared with a rather definite figure, and if much higher than this figure tends to arouse suspicion in the mind of the analyst.

The other four determinations mentioned are for substances containing nitrogen, and are in a way a history of any sewage contamination which may have reached the water at any time.

The albuminoid ammonia is a measure (representing from forty to fifty per cent.) of the organic nitrogen, and in sewage is very high. If sewage is finding its way through the ground for a greater or less distance a natural oxidation of this nitrogen takes place and free ammonia is formed as one of the first products of this change. If there is distance enough between the polluting source and the pond, or well, or supply, whatever it may be, this change may go further and the nitrogen pass into the form of nitrites; or even further, to nitrates, which is the final state of oxidation; and any polluting matter which has passed through sufficient soil to become completely changed to nitrates has then become a harmless mineral constituent instead of the dangerous organic matter accompanied by large numbers of bacteria as it originally started. Thus it will be seen that the most satisfactory condition for a water which may unfortunately be subjected to possible pollution is a high nitrate figure and low albuminoid ammonia, free ammonia, and nitrites. In fact, the presence of any considerable amount of either of the last two shows that the water is not completely purified by natural filtration in the case of a well-water, or that pollution is entering a pond, reservoir, or stream. The albuminoid figure must be judged from the nature of the water. A well-water should contain little or no albuminoid ammonia, and the figure for surface-waters, such as ponds, reservoirs, and streams, should not be exceedingly high, but would in nearly every case be higher than that for a well, due to nitrogenous matters taken up in the passage of the water over the ground. The same is true of the oxygen-consumed determination, it being high in the case of surface-waters for the same reason.

In connection with the above tests, which are known as the chemical analysis, the total number of bacteria in each cubic centimeter of the water is determined by growing the bacteria at a definite temperature in a gelatin media which has been specially prepared. This count is reported, showing the actual number of water bacteria which will develop under these definite conditions. The bacteriologist goes further than this in some cases, however, and makes special tests to isolate the typical sewage bacterium known as *B. coli communis*. If this bacterium is found in water, it can

be pretty definitely classed as dangerous, and in the majority of cases the chemical analysis will show pretty definite indications of pollution. The water, however, may be in an unsatisfactory condition, showing incomplete purification of polluting matters, and yet not show the presence of this sewage bacterium. This latter condition is apt to be true in the case of a well where the soil between the polluting sources and the well is almost but not quite able to take care of the pollution satisfactorily.

Below are given typical analyses of waters, which may be classed as follows:

1. A pure ground water.
2. A polluted ground water.
3. A good water from a safe surface-water supply.
4. An unsatisfactory polluted surface-water.

| Date of: | No. 1. | No. 2. | No. 3. | No. 4. |
|-------------------------|-----------------|----------------------------|-------------------------|----------------------|
| Collection..... | April 16, 1906. | June 1, 1906. | May 8, 1906. | June 5, 1906. |
| Examination..... | April 17, 1906. | June 1, 1906. | May 9, 1906. | June 6, 1906. |
| Appearance: | | | | |
| Turbidity..... | none. | none. | none. | very slight. |
| Sediment..... | none. | very slight. | very slight. | } considerable. |
| Color..... | .00 | .02 | .61 | |
| Odor: | | | | |
| Cold..... | none. | } very faintly unpleasant. | } distinctly vegetable. | faintly vegetable. |
| Hot..... | none. | | | decidedly vegetable. |
| Residue on evaporation: | | | | |
| Total..... | 4.95 | 40.0 | 4.00 | 6.90 |
| Loss on ignition..... | 1.15 | 15.3 | 1.75 | 3.60 |
| Fixed..... | 3.80 | 24.7 | 2.25 | 3.30 |
| Ammonia: | | | | |
| Free..... | .0004 | .0220 | .0008 | .0084 |
| Albuminoid: | | | | |
| Total..... | .0006 | .0040 | .0134 | .0888 |
| In solution..... | | .0086 | .0122 | .0324 |
| In suspension..... | | .0004 | .0012 | .0064 |
| Chlorin..... | .53 | 3.98 | .35 | .50 |
| Nitrogen as— | | | | |
| Nitrates..... | .60 | 1.63 | .011 | .006 |
| Nitrites..... | .0000 | .0140 | .0000 | .0001 |
| Oxygen consumed..... | .01 | .07 | .63 | 1.71 |
| Hardness..... | 1.70 | 15.40 | .65 | 1.35 |
| Alkalinity..... | 1.40 | 6.10 | .55 | .50 |
| Bacteria per cc..... | 1 | 804 | 9 | 2653 |

Some waters, principally those which have been stored in reservoirs, occasionally have very disagreeable tastes and odors develop in them. By examining such a water under the microscope the analyst finds that in a great many cases this is due to a growth of small microscopic plants or animals known as diatoms, algæ, protozoa, etc., and these are classified into smaller groups, and each different form has a name of its own. These growths are not known to be injurious to health, but are frequently the cause of complaints heard about public water-supplies.

It is hoped that the above remarks, although perhaps a little technical for the layman, may serve to show with some clearness the lines upon which a water analyst works in passing upon a sample of water from a sanitary standpoint.—*Rhode Island Bulletin.*

KANSAS WHEAT.

Up from the South on the dust-laden wind rolled the army of devastation. Microscopic units massed into devouring columns swept over the grain-fields of billowing green, leaving them withered and dying.

"God help us!" cried the farmers, "for we are powerless. Our wheat is destroyed; our labor of months is wasted."

And in the grain marts of the world the price of wheat jumped ten points—because the Green Bug had invaded Kansas.

Then the dry ground of the wheat-fields baked and cracked, for there was dire need of rain. From the western frontier of the wheat-belt arose prayers for rain; and the banner county of the Arkansas echoed back: "Give us rain!"

To the Chicago pit and the Paris bourse the wires carried the message: "Wheat in Kansas ruined by drouth." And wheat went up to a dollar.

The specter of hard times stalked upon the plains of Kansas.

Then the Green Bug vanished before the Parasite. The suffering soil again soaked itself with the drenching downpour. Vegetation revived in a day. With a rush, on came the harvest. As from a nightmare the Kansas farmer awoke. Great fields of golden wheat lay before him ready for binder and the header.

Out from the plains of Kansas went forth a cry for help that almost caused the sheeted dead to squeak and gibber and Father Time to whet his scythe, to save the Kansas wheat. Close the stores—send the clerks to the fields! Open the jails—put the penitents to work! Ask the railroads to release their hands! Fall in! Fall in! On to the harvest fields—politicians and preachers; little children and blacksmiths; rich men and beggars! Rally around the golden banner of Harvest to the tune of the reaper and the thresher!

The volunteer army marched, and fought, and won. Kansas wheat is in Kansas bins, and it will require sixty million dollars of somebody's money to get it out.

PAUL A. LOVEWELL, Topeka, Kan.

BULLETIN

OF THE

Kansas State Board of Health.

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No. 8.

AUGUST, 1907.

VOL. 3.

It is not the virulence of the typhoid germ that may make the typhoid case a menace to the community, but its ability to spread the infection.

The degree of purity and wholesomeness of a municipal water-supply is usually an index of the people's interest in municipal cleanliness.

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VITAL STATISTICS

Reported to the Kansas Board of Health for July, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|------------------------------------|--------------------|----------|-------------------|----------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| The State... total, July, 1906. | 75 115 | 51 65 | 163 131 | 25 19 | 43 19 | 8 2 | 14 43 | 2 2 | 76 87 | 1 0 | 74 88 | 4 1 |
| Allen | 1 | 1 | 14 | 1 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Anderson | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 3 | 0 |
| Barber | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barton | 1 | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bourbon | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Brown | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Butler | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Chase | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chautauqua | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Cherokee | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cheyenne | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clark | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Clay | 1 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Cloud | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| Coffey | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Comanche | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cowley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crawford | 3 | 3 | 5 | 5 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Decatur | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DeKalb | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickinson | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Douglas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Edwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellisworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Flaney | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 |
| Ford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Franklin | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Geary | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grant | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gray | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greeley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greenwood | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hamilton | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Harper | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Harvey | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Haskell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Jackson | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jefferson | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Jewell | 1 | 1 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Johnson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kearny | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kingman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kiowa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Lane | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Linn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Logan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lyon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marion | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marshall | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| McPherson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|--------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|-----------|-----------|-----------|----------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| †Miami | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| *Mitchell | 0 | 0 | 17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Montgomery | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Morris | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Morton | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Neosho | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Norton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osborne | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| *Pawnee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Phillips | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pratt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rawlins | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reano | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Republic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rice | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Riley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Rock | 0 | 0 | 1 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Saline | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Scott | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Sedgwick | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Seward | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Shawnee | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Sheridan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Sherman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Smith | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Stafford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stanton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stevens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sumner | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thomas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Trego | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Wabunsee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wallace | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Wichita | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Wilson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Woodson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| *Atchison | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Coffeyville | 10 | 9 | 21 | 9 | 0 | 0 | 0 | 0 | 2 | 0 | 10 | 0 |
| Kansas City | 1 | 1 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Leavenworth | 6 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parsons | 6 | 6 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| Topeka | 6 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wichita | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| State Institutions | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*No report.

†No contagious diseases in county.

‡No health officer.

Typhoid Fever and Health Officers.

Each recurring year records an increasing number of cases of typhoid fever, with the usual ratio of fatalities. An educated public sentiment will or should demand that the crime of spreading this infection from the sick to the well should cease, and that such laws as provide ways and methods of prevention in the dissemination of contagious and infectious diseases shall be rigorously enforced. The various methods by which typhoid fever is disseminated are sufficiently well known to form the basis for an intelligent inquiry and search into the cause of each individual case, with a reasonable assurance that such cause may be definitely determined. Before any means for prevention can be set in motion by health officers or boards of health, they must have definite and immediate information of the prevalence and location of each individual case, which information can only be obtained by the prompt report of the attending physician to the proper health officer. In this connection it is desired to call the attention of health officers to chapter 285, Session Laws 1901, which requires the prompt report of all diseases dangerous to the public health, of which there can be no controversy but that typhoid fever is the principal one. Health officers are therefore required to enforce this provision of the law at all hazards and under all circumstances, for we are of the opinion that we must be held morally responsible, if not criminally so, should we neglect our duty in this important matter. Once a case of typhoid fever is reported, immediate steps should be taken to locate the source of infection, if not already done by the attending physician. This inquiry should, of course, be made with the co-operation of the family physician and with the fullest understanding and in a fraternal spirit. When the cause is found, the remedy is, of course, at once suggested, and should be put into immediate operation. The chemical and bacteriological laboratories of the Kansas University and the State Board of Health are at the service of physicians and health officers in such examination of water, milk or food that may be suspected, and every other facility offered within our power, in order that the source of infection may be discovered and removed, if possible.

It should be remembered, however, that if the excretions of each individually known case was thoroughly disinfected, that flies were as energetically and prayerfully excluded from the typhoid room as the *stegomia callopsus* out of the yellow-fever ward, if the nurse

and attendants sterilized their hands after handling patients, the primary sources of the germs of infection, outside of the "walking cases," would be abolished.

Valuable data of the sanitary conditions of the natural waters and of the municipal water-supplies of the state are being gathered, at considerable expense and effort; but all this must go for naught if the physicians and health officers are neglectful of their high privilege and duty in the fight against typhoid fever. We appeal to you, health officers, to the great body of the profession—the most unselfish body of men in the world—*let us get busy*. Report your cases of typhoid immediately, and the department of health will endeavor to do its share in the work of prevention.

The Contagiosity of Typhoid Fever.

It is a recognized fact now that typhoid fever is not simply an acute inflammation of the bowels. It is more than that. It is an infectious disease.

The infectious diseases are always of a parasitic nature. They are determined by living cells or germs that find their way into the body. Once there, they will start to live in some viscera, or in the blood, according to their way of coming in, and providing the human body which they invade is too weak to get rid of them by its normal physiological functions.

The germ of typhoid fever is well known; it is the Eberth's bacillus. This germ lives in the small bowel, where it multiplies and is eliminated constantly with the patient's stools. It is not infrequently found also in the urine, and even sometimes in the blood. Hence the danger of a typhoid patient to other people.

But this danger should be well understood. There is nothing in the breath of the patient, or on the surface of his skin or in his sputa that can disseminate this disease. Typhoid fever is not like an eruptive fever, like scarlet fever, or smallpox, or measles. It is not, either, like some infectious inflammation of the throat or the lung, like diphtheria or consumption. It is an infection of the bowels, and the danger comes from that spot.

Take care of the typhoid fever patient's stools and urine; there lies the danger. Take care first when you are helping the patient in his bed. Keep him clean and keep yourself clean, especially your hands. Never forget to wash your hands when you touch the bedpan, when you change his soiled clothes, when you wash his back. Don't let any fecal matter, however small it is, dry on your

fingers and be swallowed with your next meal. And see that everything—stools, urine, bedpan, soiled linens, etc.—is disinfected, for there lies another duty: you shall not only protect yourself, you shall also protect others.

The stools and urine should never be thrown away in the water-closet or the cesspool, as they are. It is a duty to mix them with some disinfecting powder (lime) or solution (copper, lime, formalin). Why this? Because they can bring typhoid from to some other people.

You see, we know a good deal more now about typhoid fever. This is an inquisitive age. In the old days, nobody would inquire where the human excreta were going after they left the body. We do inquire now. We know that very often, where proper precautions are not taken, matters thrown in the cesspool go in the well, excreta from the water-closet go to the river. And so many people sometimes drink water from a polluted well or river that it is no surprise if they catch typhoid fever. When do they catch typhoid fever? Only when the stools or urine of typhoid fever patients have been thrown without disinfection in the cesspool, in the closet, or on the pile of manure behind the barn. The infected matter soaks in the ground, reaches the underground water, which is good liquid to keep alive the typhoid fever germ, and from there goes to the well or the river. After that, you have only to drink that water, and there you are. If your organism is well prepared by fatigue or weakness, you will see the effect in two weeks.

Epidemics can very often be explained by contamination of the drinking water. At Clermont-Ferrand, whole families caught typhoid fever from a well. At Hambourg, every ward receiving water from a contaminated reservoir had numerous cases of the disease, when the adjoining wards were practically protected. These cases have repeated themselves again and again.

And there are still some other ways. It has been proven that polluted water from a well, used by a milkman to wash his milk cans and to dilute his milk, was the cause of disseminating typhoid fever among his customers (Boston).

This is why precautions of a sanitary nature are so urgently needed around a typhoid patient, and why hygiene is sometimes so helpful to others as well as to ourselves. (Dr E. P. BENNETT.)

To Prevent Typhoid Fever.

From the Montana State Board of Health.

See that every particle of excreta from any person sick with typhoid is disinfected.

See that every person under your control, yourself included, deposits his excreta only in the place provided.

See that your privy is so located that neither the seepage nor the surface drainage therefrom can possibly enter any well or source of water-supply.

See that your milk comes from a dairy that is conducted in a sanitary manner.

See that your barn-yard is clean, so that flies may be reduced in numbers.

See that your yard is clean. Let the sunshine into every corner of your yard, barn-yard, chicken-yard, barn and house. Sunshine is the best disinfectant we have.

Clean up your premises and let the sunshine in, and quit being dirty.

The time to prevent Typhoid Fever is all the time. Germs planted on your place this year will probably live until next year. You, or any member of your family, may furnish the ground for them to get a fresh start in next year. Therefore, see that your place is not infected by going back to first principles and seeing that all human excreta is deposited only in a place provided for such purposes and that such place is properly located.

THE PATIENT AND NURSE.

Isolate the patient as far as possible, and prohibit the nurse from attending to any household duties, especially about the kitchen.

Keep the room screened from flies.

Disinfect all urine and bowel excreta with milk of lime (common whitewash).

Immerse all linen or clothing that comes in contact with the patient, and all vessels, knives, forks, etc., used about the patient in a 1 to 20 (one and a half ounces of carbolic acid to one quart of water) solution of carbolic acid for one hour before removing from the room.

The nurse must disinfect hands with the carbolic solution or a

1 to 1000 solution of bichloride of mercury after handling the patient, excreta or anything that has come in contact with the patient.

All water or milk used by any one in the household should be boiled.

Typhoid from Causes Other than Water.

The backwardness of health departments in protecting city milk supplies from infection by typhoid fever is illustrated by the fact that the city of Denver, Colo., has only within a few weeks passed an ordinance designed to compel dairymen to sterilize their utensils before using them. What other health protective features the ordinance contains, if any, we cannot state, but it should strike at the root of the matter by prohibiting the use of impure water for washing milk-pails, cans, or bottles. In fact, every city should exclude from delivery or sale within its limits any milk from dairy farms whose water-supply is not above suspicion. At Denver the water company has been bitterly attacked of late on account of the prevalence of typhoid in the city, it being alleged that the responsibility for the disease rested with the company. Without presuming to pass on this contention, we do emphatically assert that the time has come for health departments and the public generally to look well to other causes than water for the spread of typhoid. To this end, water departments must, in many cities, insist on the reorganization of health departments, and on ample appropriations for health-board work. One of the most important means to this end is the appointment of well-trained, well-paid, permanent health officers, who give their whole time and energy to the work.—*N. M. Baker, in Engineering News, Nov. 22, 1906.*

Typhoid Fever and Life Insurance.

The medical director of a prominent life insurance company, in a letter to the executive committee, calls attention to the economic waste from deaths from typhoid fever, a preventable disease, as compared with the death-rate from the same disease in Europe. The suggestions as to sources of infection in addition to that of the water-supply are worthy of notice. The letter follows:

“While the deaths from typhoid fever were considerably below the average for the entire history of the company, they were more than three times greater than they should have been when compared with the deaths from this cause in certain European countries, namely, England and Wales, Scotland, Germany, Sweden

and Norway, where the average was about 10 for 100,000 of the population, while in the United States it was about 35. If the typhoid fever mortality had been as favorable in the United States as it was in the countries mentioned above, assuming that those who died of typhoid fever during the year were insured for the average amount of all the members who died, this company would have saved over \$200,000 in death losses for the year. Much might be accomplished in reducing this unnecessary mortality by wise legislation along the lines of improved safety devices on our railroads, improved sanitation, pure water, ice and milk supplies in our cities, towns and rural districts, and improved sanitary toilet-rooms on our railroad trains, which are undoubtedly important factors in the distribution of typhoid fever germs. It has been fully demonstrated in several localities in this country and in Europe that typhoid fever can practically be eradicated by proper sanitation, a clean soil, and a supply of pure water, ice and milk.

"The average amount of insurance held by the 1951 deceased members was \$3872. Sixty-eight members died during the year who had been insured less than one year, whose claims amounted to \$265,000. Respectfully submitted,

_____, *Medical Director.*"

A New Substitute for Citron.

"Seatron" is the name of a new food which two Seattleites are about to place on the market, says a Washington exchange. It is obtained from kelp, the long, slimy tubular sea plant with a bulbous head which rises from the depths and renders navigation along these shores very difficult at times. A man to fall overboard into a forest of kelp would meet with an almost certain death. Well, these men have produced from kelp, by a process unknown except to themselves, a preparation which may be made into many kinds of confections, jams, preserves, marmalades, sweet and sour pickles, and citron, and known as "seatron." Orders have been received from all of the places to which samples were sent for inspection, including New York City, Chicago, Minneapolis, St. Louis, Omaha, and Seattle. Until the company occupies larger quarters no attempt will be made to manufacture anything except "seatron."—*The Stewards' Bulletin.*

DRUG ANALYSES No. VI.

By L. E. SAYRE, Ph. M., Director of Drug Analysis for the Board.

LAWRENCE, KAN., June 15, 1907.

I have the honor to present to the Board a report of the analytical work of the drug laboratory during the interim since the last report. The articles sent to the laboratory have not been chosen by the inspector or others because these articles were under suspicion, but were selected almost at random for the purpose of ascertaining the quality of various medicinal substances now being dispensed by the pharmacist. Many of these articles were on the shelves of the druggist before the enactment of the food and drug law. For the above reasons none of the samples herein reported were collected as prescribed by regulation 2, section 3, of the law.

It should be stated in this connection that our inspector, under the judicious direction of the Board, has been carrying on a campaign of instruction at the outset, assisting the druggists, if possible, in their efforts to conform with the various provisions of the law.

It is gratifying to learn that the drug inspector receives the hearty support of the pharmacists of the state. He finds the members of the trade anxious to learn the law which, when applied to manifold conditions, becomes complicated and difficult of interpretation. In this connection permit me to call attention to the action taken at the last annual meeting of the Kansas Pharmaceutical Association, held at Kansas City, when Doctor Crumbine, chief inspector, and your director of drug analysis, were, by special resolution, invited to address the association. A large number of wholesale and retail druggists were in attendance, and the interest manifested was remarkable. The cordial support and cooperation of the association was shown in many ways, not least significant, perhaps, by the complimentary election of the chief inspector, Doctor Crumbine, as associate member of the association.

Allow me to call attention at this time to a resolution reached by the committee of revision of the United States Pharmacopœia, which has a general bearing upon the character of pharmaceutical products, and a specific effect upon the larger manufacturers of pharmaceutical preparations, who are sometimes obliged to vary the processes of the Pharmacopœia. The resolution referred to reads as follows:

"In the manufacture of products and preparations on a large

scale, deviation from the official processes may be necessary, but the products must conform to the official requirements as determined by the tests of the United States Pharmacopœia, eighth revision, and the finished preparations must be identical with those made by the official processes."

Some have been inclined to place a very liberal construction upon this resolution, reading into it a certain privilege of variation in the product from the official standard, such as a variation from the official solvents or menstrua in the case of liniments, fluid extracts, or even tinctures. We should like to state that we cannot afford to construe this resolution in any such way, but will be obliged to hold strictly to the prescribed tests of the Pharmacopœia. The tinctures and other preparations for which there are no prescribed tests must be held to the standard of the official formula, even in what is termed the non-essential constituents.

The following results of analyses are herewith reported:

TANNIC ACID.

Should contain not more than 0.2 per cent. of ash, and no gum, dextrin or resin.

No. 1381. Broken package. Contained 0.325 per cent. of ash and some resinous matter.

No. 1405. Broken package, paper sack. Contained 0.58 per cent. of ash and some resinous matter.

No. 1445. Broken package, paper package. Contained 0.565 per cent. of ash and some resinous matter.

OIL OF PEPPERMINT.

The official standard is: Sp. gr., 0.894 to 0.914, at 25° C.; angle of rotation, —25° to —33°.

No. 1384. Two-ounce flint-glass bottle, broken package. Sp. gr., 0.901; angle of rotation, —25°.

No. 1418. Two-ounce flint glass bottle, broken package. Sp. gr., 0.895, 25° C.; angle of rotation, —22.5°.

SODIUM CARBONATE.

Should be monohydrated, and contain not less than 85 per cent. of pure anhydrous sodium carbonate and 14.5 per cent. of water.

No. 1385. Contained 35.7 per cent. moisture, 100.4 per cent. Na_2CO_3 . Not official.

No. 1409. Contained 14.85 per cent. moisture, 99.8 per cent. Na_2CO_3 . Monohydrated sample, official quality.

MENTHOL.

Should have a melting-point of 63°; should gelatinize without leaving a residue; should contain no thymol.

No. 1386. Broken package. Melting-point, 43° C.; no thymol present; slight residue on evaporation.

No. 1422. Original package. Melting-point, 42.7 C.; thymol, a trace; trace of residue on evaporation.

No. 1442. Original package. Melting-point, 43.7° C.; no thymol present; non-volatile residue, 0.0575 per cent.

PODOPHYLLIN.

No. 1387. Original package, ash 1.00 per cent.; soluble in ether, 61.00 per cent.

No. 1417. Original package. Ash, 0.94 per cent.; soluble in ether, 57.2 per cent.

No. 1443. Original package. Ash, 1.07 per cent.

CALCIUM HYPOPHOSPHITE.

Should contain no phosphate or sulfate, arsenic, or heavy metals.

No. 1390. Broken package. Contained sulfate or phosphate, a trace; heavy metals, a trace; did not contain arsenic.

No. 1407*a*. Original package. Contained sulfate or phosphate, a trace; heavy metals, a trace; contained no arsenic.

No. 1407*b*. Original package. Contained sulfate, a trace; heavy metals, a trace; no arsenic present.

POTASSIUM CARBONATE.

Should contain not less than 98 per cent. of carbonate.

No. 1391. Broken package. Contained moisture, 16.45 per cent.; potassium carbonate, 99 per cent. in dry sample.

No. 1419. Broken package. Contained moisture, 16.2 per cent.; potassium carbonate, 99.7 per cent.

No. 1448. Broken package. Contained moisture, 18.7 per cent.; potassium carbonate, 99 per cent. in dry sample.

No. 1471. Broken package. A hydrated sample. The hydrated potassium carbonate is not official.

CREOSOTE.

Should not coagulate collodion. Specific gravity should not be above 1.072° C.

No. 1392. Original package. Claimed to be from coal-tar; smells like coal-tar creosote. Not official.

No. 1395. Broken package. Claimed to be from wood. Sp. gr., 1.071 at 25° C.; characteristic odor, suspicious color, coagulates collodion. Not first quality.

No. 1427. Commercial, broken package. A reddish liquid. Commercial creosote is not official.

MASS OF MERCURY.

Should contain 33 per cent. of mercury. There should be no petrolatum present.

No. 1396. Broken package. Contained 28.8 per cent. of mercury; no petrolatum present; deficient in mercury.

No. 1412. Broken package. Contained 33.3 per cent. of mercury; contains petrolatum.

No. 1468. (Blue mass.) Broken package. Contained 34.5 per cent. mercury; contained petrolatum.

No. 1483. (Blue mass.) Broken package. Contained 34.4 per cent. mercury; contained petrolatum, but less than sample No. 1468.

FLUID EXTRACT OF BELLADONNA.

Should contain 0.5 per cent. alkaloids.

No. 1397a. Contained 0.4 per cent. alkaloids.

ALOID.

Should volatilize without leaving a residue.

No. 1398. Contained 0.98 per cent. of ash.

No. 1404a. Contained 0.384 per cent. of ash.

No. 1404b. Contained 0.31 per cent. of ash.

No. 1438a. Contained 0.364 per cent. of ash.

No. 1439b. Contained 0.37 per cent. of ash.

CHLORID OF LIME.

Chlorinated lime should contain not less than 30 per cent. of available chlorin.

No. 1399b. Original package, from Brookman Manufacturing Company. Contained 0.133 per cent. of available chlorin.

No. 1406. Broken package. Contained 29.0 per cent. available chlorin.

No. 1482. "Dow Bleach," from Dow Chemical Company. Contained 37.5 per cent. free chlorin.

CHLORAL HYDRATE.

Should have a melting-point of about 58°, and should contain no alcoholate.

No. 1400. Melting-point, 52°-54° C.; no chloral-alcoholate present.

No. 1413. Melting-point, 52°-54° C.; no chloral-alcoholate present.

POWDERED HYDRASTIS.

Should contain not less than 2.5 per cent. of hydrastin.

No. 1450. From McPike Drug Company. Contained 1.577 per cent. of hydrastin.

MISCELLANEOUS.

No. 1388. Powdered borax. Not completely soluble in 21 parts of water, but dissolved upon the addition of more water.

No. 1410. Borax. Not completely soluble in 21 parts of water; dissolved upon the addition of more water.

No. 1519. Mustard. Contained 5.016 per cent. of ash.

No. 1520b. White pepper. Contained 0.936 per cent. of ash.

No. 1521c. Cloves. Contained 7.15 per cent. of ash.

No. 1522*d*. Allspice. Contained 4.696 per cent. of ash.

No. 1523*e*. Cayenne pepper. Contained 7.90 per cent. ash.

No. 1524*f*. Black pepper. Contained 5.33 per cent. ash.

No. 1525*g*. Ginger. Contained 4.71 per cent. of ash.

No. 1526*h*. Cinnamon. Contained 3.71 per cent. ash.

No. 1527*i*. Nutmeg. Contained 3.86 per cent. ash.

No. 1542. Obesity Tablets. One tablet weighed 0.5680 grammes and contained 0.265 grammes of Na_2CO_3 .

The following material was sent into the laboratory by members of your Board asking for qualitative analyses :

1558. Calcium Sulfid Tablets, brown coated. These contained 0.94 gr. each of the official calcium sulfid, which contains 60 per cent. of calcium sulfid with unchanged calcium sulfate.

1557. Adlers Treatment of Appendicitis. One-pint bottle. This preparation, by our examination, seems to consist, mainly, of the following: Magnesium sulfate (U. S. P.) 30.06 per cent.; alcohol, 1.53 per cent.; sugar, 0.15 per cent. 25 cc. gave 7.5814 of organic solids at 100° C.; 25 cc. gave 4.2719 of inorganic anhydrous salts. The conclusion we were inclined to make was, that the preparation depended largely upon Epsom salt and a preparation of sarsaparilla for its remedial qualities. If it contain any active specific other than the above we should be glad to learn what to look for. Our present analytical work crowds out researches of this kind at present.

1559. A confection named "Rengo." This preparation seems to be composed of the pulp of prunes, and possibly tamarinds, with sugar as a base. Upon qualitative analysis it was found to contain the following inorganic bases, after ignition: Ignited residue, 2.66 per cent. This residue gave reactions for the following: Iron, lithium and potassium. Alleged to be an anti-fat remedy.

REPORT ON STARKEY & PALEN.

Oxygen Aqua, No. 1555, and Home Treatment, No. 1556.

No. 1555. Oxygen Aqua. Contained in colorless bottle. For internal treatment. The solution is neutral; contains traces of sulfates and of calcium; specific gravity at 28°, 0.997 by the Westphal balance. Oxygen present, by the U. S. P. test: Less than 0.01 per cent. (The U. S. P. requires for hydrogen peroxid, water 3 per cent. of available oxygen.) Total solids present, 0.0166 per cent.

No. 1556. Home Treatment. Inhalent. Total solids present, 3.11 per cent.; reaction, acid; sulfates, a trace; chlorids, a trace; calcium, a trace; heavy metals (lead as a nitrate) constituted the bulk of solids. Oxygen present, 0.015 per cent. Specific gravity, 1.007 at 28°.

It is evident from the result of this analysis that the substances are comparatively inert as remedial agents. The above package was left by Inspector Kleinhaus.

L. E. SAYRE.

CIRCULAR No. 7.

To the State Food and Drug Inspectors.

It is hereby ordered that the provisions of the United States Department of Agriculture, under F. I. D. No. 76, be made a part of the food inspection decisions of Kansas, except the provision under "Copper salts in food products," which, under a former decision, was prohibited, and which stands as then promulgated. You will therefore instruct dealers and manufacturers accordingly.

I desire to particularly emphasize the provision defining the use and kind of coal-tar dyes allowed, and the requirement that only certified dyes be allowed to be used.

The following coal-tar dyes which may be used in this manner are given numbers, the numbers preceding the names referring to the number of the dye in question as listed in A. G. Green's edition of the Schultz-Julius Systematic Survey of the Organic Coloring matters, published in 1904.

The list is as follows:

Red shades: 107. Amaranth.
56. Ponceau 3 R.
517. Erythrosin.

Orange shade: 85. Orange I.

Yellow shade: 4. Naphthol yellow S.

Green shade: 435. Light green S. F. yellowish.

Blue shade: 692. Indigo disulfoacid.

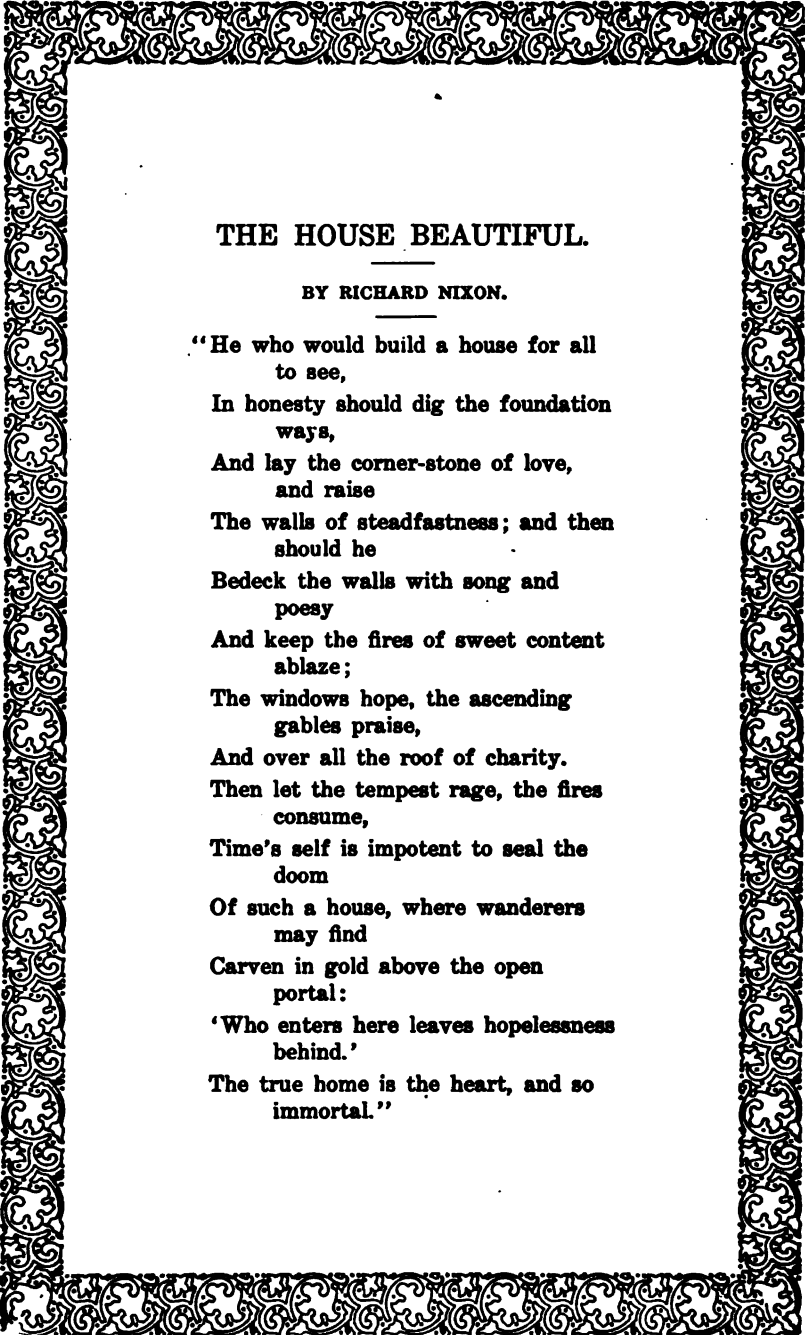
Each of these colors shall be free from any coloring matter other than the one specified and shall not contain any contamination due to imperfect or incomplete manufacture.

I desire also to call your attention to the provision on the use of preservatives, and that the use of the guarantee serial number, or any statement on the label that the article is guaranteed to conform to the Kansas food and drug law, on articles that carry the prescribed preservatives, shall not be allowed.

The sanitary inspection particularly of local slaughter-houses and meat-markets should be thorough and searching, and all unwholesome conditions be required to be corrected immediately. Cleanliness first, refrigeration second, preservatives never, in meat products.

County and municipal health officers should be visited and invited to go with you in your inspections while in their city, and instructions given them as to their duties so far as the sanitation of food products is concerned.

Very truly,
S. J. CRUMBINE,
Chief Food and Drug Inspector.



THE HOUSE BEAUTIFUL.

BY RICHARD NIXON.

"He who would build a house for all
to see,
In honesty should dig the foundation
ways,
And lay the corner-stone of love,
and raise
The walls of steadfastness; and then
should he
Bedeck the walls with song and
poesy
And keep the fires of sweet content
ablaze;
The windows hope, the ascending
gables praise,
And over all the roof of charity.
Then let the tempest rage, the fires
consume,
Time's self is impotent to seal the
doom
Of such a house, where wanderers
may find
Carven in gold above the open
portal:
'Who enters here leaves hopelessness
behind.'
The true home is the heart, and so
immortal."

BULLETIN

OF THE

Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.

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No. 9.

SEPTEMBER, 1907.

VOL. 3.

It costs!

But it is worth while!

An anæmic character: One without the red glow of a righteous purpose and the iron will of accomplishment.

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VITAL STATISTICS

Reported to the Kansas Board of Health for August, 1907

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTRIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|-----------------------------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|-----------|-----------|-----------|----------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| The State...total, August, 1906..... | 80 71 | 59 31 | 267 209 | 38 32 | 30 47 | 4 7 | 9 32 | 0 2 | 60 29 | 0 0 | 10 22 | 0 0 |
| * Allen..... | 0 | 0 | 7 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Anderson..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Atchison..... | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barber..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barton..... | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bourbon..... | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Brown..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Butler..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chase..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chautauqua..... | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cherokee..... | 2 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Cheyenne..... | 0 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Clark..... | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| * Clay..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cloud..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coffey..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Comanche..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cowley..... | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crawford..... | 5 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Decatur..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickinson..... | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan..... | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Douglas..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Edwards..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Elk..... | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellis..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Ellsworth..... | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finney..... | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Franklin..... | 5 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Geary..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Gove..... | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grant..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gray..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Greeley..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greenwood..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hamilton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Harper..... | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Harvey..... | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Haskell..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman..... | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jefferson..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Jewell..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Johnson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kearny..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Kingman..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Kiowa..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Labette..... | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth..... | 0 | 0 | 3 | 1 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 0 |
| Lincoln..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linn..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Logan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lyons..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Marion..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marshall..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * McPherson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losia. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Meade..... | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Miami..... | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Mitchell..... | 1 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Montgomery..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Morris..... | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Morton..... | 1 | 1 | 4 | 1 | 1 | 0 | 0 | 0 | 25 | 0 | 7 | 0 |
| Nemaha..... | 2 | 2 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neosho..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Norton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| *Osborne..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips..... | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Pottawatomie..... | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 1 | 0 | 4 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rawlins..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 1 | 0 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rice..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Riley..... | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rooks..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 4 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell..... | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| †Scott..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sedgwick..... | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Seward..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman..... | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Smith..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 |
| †Stanton..... | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stevens..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sumner..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego..... | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Wabunsee..... | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Wallace..... | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington..... | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wilson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Woodson..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 10 | 0 | 2 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Coffeyville..... | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Independence..... | 16 | 7 | 50 | 9 | 3 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Kansas City..... | 4 | 2 | 10 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth..... | 4 | 4 | 5 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Parsons..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Topeka..... | | | | | | | | | | | | |
| *Wichita..... | | | | | | | | | | | | |
| State Institutions.. | 6 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

FOOD ANALYSES, No. X.

By E. H. S. BAILEY, Ph. D., Food Analyst for the Board.

LAWRENCE, KAN., September 12, 1907.

In accordance with request, I herewith submit report of some recent work from advanced copy for the BULLETIN:

EXTRACT OF MALT.

The following beverages have been examined for alcohol and the reports are given in per cent. by volume:

2457. Prima Tonic, 5.86 per cent.

2710. Rochester Malt Extract, 4.63 per cent.

3090 Goet's Malt Extract, 1.45 per cent.

Another sample of the latter, reported by another analyst and having the same label but a different device on the crown cap, contains 5.86 per cent. of alcohol.

The following analyses were communicated to this laboratory by trustworthy authority:

| | | | |
|--------------------------|-------|--------------------|-------|
| Pabst Malt..... | 5.83% | Johann Hoff's..... | 5.17% |
| Schuster's Malt..... | 4.30 | Bohemian..... | 4.55 |
| Maltos..... | 5.20 | Malto-Tone..... | 4.76 |
| Leopold Hoff's Malt..... | 6.90 | Malt Nutrine..... | 2.24 |
| Pepsotonic..... | 5.51 | Wyeth's Malt..... | 2.47 |

The specific gravity of the last series mentioned varies between 1.0013 and 1.0543. They are, in other words, beverages having a specific gravity differing only slightly from that of beer, which has a specific gravity of from 1.0047 to 1.0213. The U. S. P. "Extract of Malt," on the other hand, is a thick liquid having the consistency of honey.

From the 1905-'06 report of the New Hampshire State Board of Health we quote:

"A true malt extract is a heavy, syrupy fluid approaching the consistency of glucose, prepared by concentrating an aqueous extract of malt under diminished atmospheric pressure. Such an extract should contain over 70 per cent. of solid matter, the latter consisting of maltose or malt sugar, together with a certain percentage of nitrogenous bodies, and, if carefully prepared, a small amount of an enzymic ferment known as malt diastase. The latter is supposed to possess a certain dietetic value, because of the property this body has of converting the starches into sugar. It is claimed that true malt extract contains no alcohol. (Most samples of malt extract contain small quantities of alcohol.) Ordinary so-called 'malt extract,' on the other hand, is in the nature of a heavy beer, approaching somewhat in character that of porter. As no diastatic

power was detected in any of the cases of samples examined, any tonic properties possessed by the preparations must be nearly identical with those of ordinary beer."

Among other analyses reported, the following are of general interest:

| <i>Brand.</i> | <i>Manufacturer.</i> | <i>Alcohol, by vol.</i> | <i>Solids.</i> |
|--------------------|----------------------------------------|-----------------------------|----------------|
| Miller's Best..... | Miller's Brewing Co., Milwaukee | 5.45% | 8.91% |
| Bavarian | Clark & Roberts, Boston, agents..... | 4.50 | 7.48 |
| Schultz's | Schultz's Malt Extract Co., New York.. | 4.55 | 6.21 |
| Teutonic..... | S. Lieberman & Son's Brewing Co..... | 8.07 | 9.10 |
| Mulford's..... | H. K. Mulford Co., Philadelphia | 7.15 | 8.43 |
| Maltine..... | Maltine Manufacturing Co., New York.. | 1.95 | 70.00 |
| Trommer's | Trommer Co., Tremont, Ohio | 1.84 | 70.50 |

It is evident that the last two samples mentioned, from their high per cent. of solids and low per cent. of alcohol, may be classed under the head of genuine malt extract.

The various malt extracts upon the market must be classified either as medicines or as beverages. If classified as medicines they are either substances sold or dispensed, recognized by the United States Pharmacopœia, or National Formulary, or proprietary medicines. Many of the malts on the market contain from 3.50 to 6.50 per cent. of alcohol by volume. The extract of malt recognized in the United States Pharmacopœia is entirely a different liquid, which should contain practically no alcohol. It is thick and heavy, while the so-called malt extracts upon the market are comparatively light in specific gravity, running from 1.0013 to 1.0284, so that it does not correspond at all to a pharmaceutical preparation or one in which the composition need not be stated. If it is claimed to be a medicine or in the proprietary class, then, since it contains alcohol, the percentage must be stated upon the label, or at least a statement must be made that it contains not more than a certain amount of alcohol.

If it is not a medicine, it would be regarded as a beverage, and if it contains no deleterious ingredients would be legal as far as the food and drugs law of February 14, 1907, is concerned. On account of the alcohol contained, these malt beverages would have to be considered under the prohibitory law.

"In connection with all matters relating to the public health, with regard to the adulteration of foods, in all matters affecting the public health in connection with the operation of commerce, in all those things which are essential to the public good, the state must interfere and by a strong hand protect the people."—*Governor Hughes, of New York.*

Food and Drugs Law Catechism.

Continued from July BULLETIN.

Ques. Will a label stating that the preparation contains not to exceed — per cent of alcohol, or say, acetanilid, answer?

Ans. A statement of the maximum per cent. of alcohol contained in a preparation would be a proper statement, but the narcotic drugs required to be stated must have the exact quantity stated in grains or minims per ounce or fluid ounce.

Q. Can a druggist fill a family recipe for liniment with the following label: "Liniment not intended for internal use."

A. In addition to such a label, the alcoholic content or narcotic drug, if they are present, must be stated; or, if the mixture is composed entirely of U. S. P. or N. F. preparations, the name and quantities of such preparations may be used as a label in lieu of the alcoholic and narcotic drug statement.

Q. Can we put up corn cure containing cannabis indica without a statement of its presence on the label?

A. No.

Q. If a horse-doctor calls for a mixture of chloroform, ether or laudanum, for colic in horses, must we make him write a prescription for same or state percentage of each ingredient on bottle?

A. The prescription of a regularly licensed veterinarian is exempt from the required drug statement on the label.

Q. Can we empty a Lilly F. E. in a P. D. & Co. bottle, the bottle being used to dispense from only?

A. Yes; providing the bottle is labeled as containing the Lilly preparation.

Q. How about maple syrup that is branded "maple syrup," and below it states that this syrup is free from adulteration?

A. Such syrup should be a genuine maple syrup.

Q. Is it essential that the druggist shall specify the per cent. of alcohol in prescriptions sent to him to be filled?

A. No; physicians' prescriptions are exempt.

Q. It is assumed that it would be necessary for druggists to so specify per cent. of alcohol or narcotics in preparations asked for by the laymen.

A. You are correct; provided, that if such articles are U. S. P. or N. F. preparations, they may be labeled by merely the name of the preparation.

Q. What shall the retail druggist do about placing contents of packages obtained from a wholesale house in shelf-bottles?

A. The back part of the shelf-bottle should be labeled so as to identify the preparation put therein. The per cent. of alcohol and the narcotic drug, if any be present, should also be stated, which in turn would be a matter of great convenience to the dispensing pharmacist.

Q. Will writing on the label that is already on the package be sufficient to correct any error?

A. Yes.

Q. Do parties putting up package goods have to be registered at state headquarters?

A. No.

Q. Can we sell whisky out of barrel without labeling bottle?

A. If it is a straight distilled whisky, no label need be required. If it is a compound or imitation whisky, the law requires such whisky to be labeled "compound" or "imitation"; therefore, in the selling of a bottle of whisky drawn from a barrel so labeled, the bottle in turn must bear a copy of such label.

Q. Must we mark out "sure cure" on patent medicines before selling?

A. After the 1st of October false and misleading statements on labels should be corrected or eliminated before selling.

Q. If a confectioner assort a box of chocolates out of his case, should it be labeled? If so, how?

A. If chocolates are pure goods with genuine flavors no label is required. If they are imitation chocolates or flavors a label is required stating either one or both of these facts, as the case may be.

Q. In the case of blended coffees, is the per cent. of each kind of coffee entering into the blend required to be stated?

A. No, but there must be an appreciable amount of each kind represented in the blend to be entitled to be named on the label.

Q. Will supplemental labels correcting the original label be good after October 1?

A. Yes, where the defects in the original label have been corrected by supplemental labels the goods may continue to be sold after October 1.

Believe me when I tell you that thrift of time will repay you in after-life with a usury of profit beyond your most sanguine dreams, and that waste of it will make you dwindle alike in intellectual and moral stature beyond your darkest reckoning.—*Gladstone.*

National Pure Food and Drugs Convention.

The eleventh annual convention of the Association of State and National Food and Dairy Departments was held at Jamestown, Va., July 16-19. The meeting was the most important gathering of national and state food officials ever held in this country, and the sentiments recorded and the work accomplished will be far-reaching in force and effect.

One of the natural effects of such meetings is the tendency towards unification of opinion in the fundamental things sought, and uniformity of requirements in administrative detail of the various state laws in their relation to the federal law. This is a condition which is devoutly desired by both dealers and officials, and which sooner or later will be fully accomplished.

Kansas was represented by Prof. E. H. S. Bailey, one of the Board's food analysts, and by Dr. S. J. Crumbine, chief food and drug inspector. This was the first meeting of the association in which Kansas was represented, and we trust that at each succeeding convention this state may have a part in the great work of food and drug control.

The following resolutions were unanimously adopted :

WHEREAS, The work organized by the joint committees on standards of this association and the A. O. A. C., bringing together as it does the united experience of state and national food experts and affording to the trade a full opportunity for suggestion and criticism, best meets our approval as broadly representative of the united judgment of responsible officials and of trade interests; and

WHEREAS, The secretary of agriculture has been given full authority under the foods and drugs act to recognize these committees; therefore, be it

Resolved, That the secretary of agriculture be earnestly requested to use all reasonable efforts to secure funds to enable him to make use of the aforesaid authority.

Resolved, That the abuse which has grown up under the guaranty clause of the national foods and drugs act, whereby it is made to appear in many cases that the national government guarantees the purity of the food products, calls for correction.

Resolved, That this association reiterates the necessity for closest co-operation between the states and the national government in the enforcement of pure food laws, to the end that a system of legislation enacted in the states under their police powers and by the national Congress under power given to regulate interstate commerce shall not come in conflict, and to the end that the joint knowledge and experience of state and federal officials may be brought to bear in the consideration of the many technical and practical questions arising in the enforcement of food laws.

Resolved further, That the existing unity of sentiment, purpose and efforts between the state and national authorities meets our approval, and is cause for felicitation, and we bespeak the continuance of this hearty co-operation as mutually advantageous.

Resolved, That we strongly favor such uniformity in national and state food laws as can be made to comprise the strongest and most vigorous features of present state and national laws enacted for the purpose and with the effect of protecting the consuming public against adulteration and fraud, and without imposing any hardship on the trade not necessary to the accomplishment of that purpose; but we as strongly oppose that uniformity in national and state food laws which comes only to relieve the trade from hardship by writing into those laws the weakest and least effective features of present laws, and "such cunning ingenuity" that, while bearing a fair countenance, they carry the elements of disaster in the courts and to the consuming public.

Resolved, That sanitary inspection should be extended to include small slaughter-houses, small poultry- and killing-houses, creameries, cheese factories, dairy farms, milk depots, ice-cream factories, restaurants, hotels, groceries and meat-markets, and all other places where food is produced, manufactured, stored or offered for sale, and that such inspection should include the sanitary condition of the buildings and utensils, herds, workmen and their clothing, and the condition of the raw materials and the finished product.

Resolved, That the use of mechanical carriers and other devices to obviate the necessity for handling the food products should be encouraged.

Resolved, That this association hereby tenders its thanks to its officers and executive committees for the splendid program provided for this our annual meeting, and also the officers of this association for the kind, courteous and efficient manner in which they have discharged their duties.

J. Q. EMERY,
M. A. SCOVELL,
A. H. JONES,
R. W. DUNLAP,
W. D. BIGELOW,
Committee.

Decisions—Food and Drugs Law.

ALUM IN PICKLES.

The use of alum in pickles will be considered as an adulteration, and will therefore be prohibited. It is held that stocks of alumed pickles in the hands of the dealers may be sold up to and including December 31, 1907, without interference.

SUPPLEMENTAL LABELS.

On October 1, 1907, all articles of food, drugs and drinks offered for sale, that are required by the Kansas food and drugs law to be labeled, will be required to have legal labels. Such articles whose labels do not conform to the requirements of the law may have labels corrected by supplemental labels or stickers, which may be

sold without limit of time, provided the labels or cartons be corrected in the following respects, where such correction is needed, namely:

1. If the place of manufacture or name of manufacturer is given, it must be the true name and place.
2. All statements that are false or misleading in any particular must be corrected or obliterated.
3. If any added color or preservative is used, its presence must be stated.
4. If any of the ingredients named in the law, such as alcohol, opium, etc., are present, they must be declared on the label.

"Orphan" proprietaries, or such cases where the manufacturers have gone out of business, will be analyzed by the department, and a proper supplemental label suggested, which dealers may affix and thereby meet the requirements of the law. Watch the BULLETIN for this information.

"Sartoin," the Alleged Skin Food.

The daily press contains "reading" advertisements of a wonderful (*sic*) skin food, which is alleged to not only clear the complexion but develop shrunken or hollow parts. It is said to be a preparation used by "French society women," etc.

This wonderful (*sic*) remedy is prepared by dissolving it in hot water, together with rose water and spirits of cologne, this to be applied to neck, face and bust, and "remarkable results will follow, even for the worst complexion."

Upon analysis this wonderful (*sic*) remedy, Sartoin, is found to be nothing more or less than magnesium sulfate, commonly known as Epsom salts, and artificially colored light pink.

It is true that Epsom salts has been used for many years as a bleaching lotion for tan and freckles, but the "remarkable results" are more likely to follow if the salts are used internally instead of externally, for many of the "bad complexions" are the result of chronic constipation. The public may have the privilege of buying a package of this wonderful (*sic*) French remedy, said to contain four ounces, for the small sum of fifty cents, and as Epsom salts costs at wholesale about one and one-half cents per pound, the philanthropic character of the promoters of the new fake proprietary is apparent. The Globe Pharmaceutical Company, whose name appears as the manufacturer, are to be commended (?) for their desire to clear the American complexion, but we trust they will change the directions to read: "For internal treatment."

An Approved Embalming Fluid and Disinfectant.

The following extract from the proceedings of the twenty-fifth annual convention of the National Funeral Directors' Association will be of interest to embalmers, physicians and sanitarians in general:

Formula of embalming fluid as submitted by the fluid committees and accepted by the National Funeral Directors' Association:

| | |
|-----------------------------------|----------|
| Formaldehyde..... | 11 lbs. |
| Glycerin..... | 4 " |
| Borax..... | 2½ " |
| Boracic acid..... | 1 " |
| Saltpetre..... | 2½ " |
| Eosin (1 per cent. solution)..... | 1 oz. |
| Water to make..... | 10 gals. |

The simplest way to compound this fluid will be:

First—To dissolve the powdered borax and boracic acid in about five gallons of water; stirring, or warming and stirring together, will hasten the solution.

Second—Add the powdered saltpetre. When completely dissolved add the glycerin and formaldehyde and make up to ten gallons with water.

Lastly, add the eosin or color solution. Distilled water gives the best results, although soft or rain water may be used.

That this is an ideal fluid we do not claim, but we believe we have proven beyond a doubt that it is better than the usual fluid on the market now. The day of the fluid which contains mineral poisons has passed. Because we felt that this was coming, we avoided all mineral poisons.

The formula we give below is for a fluid which, if used on a basis of four quarts for a 150-pound subject, will answer the demand for an approved *disinfectant* until a better one is found:

| | |
|------------------------------|-------|
| Formaldehyde (40 %)..... | 14 % |
| Borax..... | 3 |
| Boracic acid..... | 1 |
| Glycerin..... | 5 |
| Saltpetre..... | 3 |
| Solution of eosin (1 %)..... | 5 cc. |
| Water, q. s. | |

If a man can write a better book, preach a better sermon, or make a better mouse-trap than his neighbor, though he build his house in the woods, the world will make a beaten path to his door.

—*Emerson.*

The Relation of the Streptococcus to Scarlet Fever.

From Journal of the American Medical Association.

Notwithstanding the immense amount of investigation devoted to it, the etiology of the acute exanthemata still remains more or less of a mystery. It is true that in certain diseases, variola and scarlet fever for example, supposed protozoan parasites have been described which are thought to bear an etiologic relationship to these diseases. It cannot be said, however, that these parasites have been generally accepted as the true causes of the diseases in question, for they have not yet been shown to be constantly associated with the lesions, and some observers even question their parasitic nature and regard them, like the so-called cancer parasites, as peculiar cell inclusions. In the case of scarlet fever the *Cyclaster scarlatinalis* of Mallory has not been generally accepted, for while some have conceded its parasitic nature others have denied this.

There is much evidence which suggests a possible relationship between scarlet fever and some variety of the *streptococcus*. On the one hand we have proof that in the vast majority of fatal cases of scarlet fever the *streptococcus* is present; on the other hand we have the knowledge that *streptococcus* infections apart from scarlet fever may be associated with throat and skin symptoms almost indistinguishable from true scarlatinal infection. Not only are so-called surgical and puerperal scarlet fever of streptococcal origin, though not true scarlet fever, but in certain streptococcal throat infections skin lesions almost impossible to differentiate from the true disease may occur.

All this, however, is not evidence that the *streptococcus* is the actual cause of scarlet fever. It does show that this organism is very frequently associated with the disease and is probably responsible for the great mass of fatalities, but there is evidence that fatal cases of scarlet fever can occur, especially the fulminating ones, in which *streptococci* are not present. The lack of *streptococci* in the infectious skin scales, their relatively poor resistance as compared with the known resistance of scarlet-fever virus, and their occasional complete absence in some fatal cases, make it seem likely that the *streptococcus* is not the cause of scarlet fever, but merely a secondary invader. It is well known that this micro-organism plays a similar role in smallpox, a type of disease analogous to scarlet fever. Even if we assume that the role played by the *streptococcus* is a

secondary one, we must not forget that it causes most of the fatalities, and one of our constant cares in the disease should be to protect the patient from the first against possible infection from other patients who harbor *streptococci*.

Bleached Flour.

From Report of Food Commissioner of North Dakota.

Considerable attention has been given during the past year to an investigation for the purpose of determining the influence on flour of bleaching, as now practiced in flour-mills, and to determine whether there remains in the flour a harmful residuum, and what the character of this product might be. It was also further desired to know whether by the process of bleaching the quality of the flour was injured, or whether there remained in the bread produced from the same any of the chemicals employed in the process of bleaching. Full data with regard to this matter will be found in Bulletin No. 72 issued by this department, and as briefly summarizing the result of the said Bulletin we give the following:

GENERAL CONCLUSIONS.

1. Has any one a right to treat a product like flour, which forms the basis of our food products, by a chemical process unknown to the consuming public?
 2. Bleaching is not an improved bleaching process, but is the introduction of chemical agents for the purpose of treating the flour which is analogous to the bleaching of fruit and other food products.
 3. There is employed in this process of bleaching a chemical agent physiologically very active.
 4. The bleaching agent is nitrous oxide.
 5. Nitrous oxide remains in the flour after bleaching.
 6. Nitrous oxide, or the salts resulting therefrom, remains in the bread produced from flour so bleached.
 7. The quality of the gluten is injured by the bleaching.
 8. It is recognized that ozone is not a bleaching agent which can be used for flour bleaching.
 9. Bleaching permits of using low-grade flour in place of patents.
 10. Low-grade flour produced from well-cleaned wheat can be successfully bleached to resemble high grades or patents.
-

Poisonous Patent Medicines.

Because of the pure food laws, we are learning every day that we are in more danger from medicines concocted for our ills than we are from the ills themselves. We have had much impure food, but far worse have been the prepared drugs we have leaned upon when we have been ailing.

These very impure foods and poisonous patent medicines have been given wider publicity through the advertising columns of the magazines and daily papers than many of the harmless foods and medicines have received.

Physicians have always known the danger of pouring these highly-promoted-to-the-consumer patent medicines into the stomach and have advised their patients to let them alone. These honorable men have been classed as "knockers" by the big advertisers.

The consumer was told that a few bottles of "medicine" made expressly from some famous old recipe of pure herbs, unknown to the general practitioner, would just fit their particular ailment. The advertisements, prepared by experts, read well. The literature sent to prospective patients described the particular ailment from which the patient suffered. The carefully compounded remedy (?) made by a secret process is just what the patient needs. And what could be fairer? The "doctor" guarantees his stuff! Sure enough a few bottles does appear to help the patient. So would any number of poisons. Pain is deadened for a time.

It is these very poisonous patent medicines that the conscientious druggist rebels against selling. He knows their temporary good effect, and he knows the habit will be formed of taking these poisonous medicines. And he knows that means the ultimate ruination of the patient's health. Like an honorable man, he advises his trade against the use of some of the worst of these poisoned patent medicines.

The Massachusetts board of health secured thirty-seven convictions for violating the food and drugs act during one month. About one-half of these were for poisoned patent medicines. Among these were several widely advertised catarrh cures, Cocoa Wine and Vin Mariani.

From Seattle comes an account of two infants found dead in the perambulator in which they were put to sleep with Mrs. Winslow's Soothing Syrup. In New York two doctors report the death of a seven-year-old boy from taking Taylor's Anti-headache Powders,

"guaranteed absolutely harmless." Orangeine powders are similarly harmful, although advertised in magazines as a "pure remedy."

It is nothing short of criminal for men to put up poisonous drugs and deceive the unsuspecting consumer into taking them. It is not much better for a man to promote their sale in his advertising columns. These very men attempt to divert attention from themselves by their cry of substitution. In the light of recent publicity which the authorities are giving to these poisoned products the people are not going to be fooled by the editors' or manufacturers' cry of substitution. They are coming more and more to rely on the word and judgment of their retail druggist for safe medicines, and their retail grocer for pure food.—*Retailers' Journal*.

"Anthropological Bath."

Doctor Wright's Institute of Applied Science, at Americus, Kan., puts out a remedy called "Anthropological Bath." The directions state that it is to be dissolved in hot water and applied hot to relieve pain. Upon investigation this remarkable remedy proves to be Epsom salts. Verily, the nostrum fakirs are likely to corner the salts market; therefore, we advise all thrifty people "to lay in their winter supply at once."

The Billboards.

FROM PUCK.

Affectionately dedicated to the paint-besmeared landscape of New Jersey,
as seen from passing trains.

En route from giddy Gotham town to Slumberville, Pee-aye,
I watched the lovely prospect gliding noiselessly away.
The grass was green as emerald, the trees were leafing out—
Hark! Barter's Little Shiver Chills assail me with a shout.
A wheat-field's pleasant countenance of Dopa-Dola screamed,
While See That Chump? and No-you-don't, from many a hummock gleamed.
His Pastor's Choice, Toad-in-your-neck and Furrow's Dustless Beans
Chimed in with Candy Casket-ettes to woo my meager means.
Then Dromedary Consumme (just add hot air and nerve)
With Fingeritall's Two-Dollar Botch came flashing 'round the curve.
U-stola Cookey, Tough on Flats (don't die in rented house),
Lined up with Garlick's Salted Bilk with monster cows abrowse.
Strawberry's Racial Dope was there with Stench's Handshake Kills,
While Glennon's Balkan Chowder howled from all the hidden hills.

A tactful man can pull the stinger from a bee without getting stung.

CHARACTER.

"And these few precepts in thy memory
Look thou character. Give thy thought no tongue,
Nor any unproportion'd thought his act.
Be though familiar, but by no means vulgar.
The friends thou hast, and their adoption tried,
Grapple them to thy soul with hoops of steel;
But do not dull thy palm with entertainment
Of each new-hatch'd, unfledg'd comrade. Beware
Of entrance to a quarrel; but, being in,
Bear't, that th' opposed may beware of thee.
Give every man thine ear, but few thy voice;
Take each man's censure, but reserve thy judgment.
Costly thy habit as thy purse can buy,
But not express'd in fancy; rich, not gaudy:
For the apparel oft proclaims the man;
And they in France, of the best rank and station,
Are most select and generous, chief in that.
Neither a borrower, nor a lender be:
For loan oft loses both itself and friend,
And borrowing dulls the edge of husbandry.
This above all,—to thine ownself be true;
And it must follow, as the night the day,
Thou canst not then be false to any man."

—HAMLET, Act 1, Scene 2.

BULLETIN

OF THE

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Drug Analyst for the Board.

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No. 10.

OCTOBER, 1907.

Vol. 8.

Are you a "lifter" or a "leaner" ?

The wholesomeness, and not the cost, of a public water-supply
is alone entitled to first consideration.

The pollution of the natural waters of Kansas by municipal
sewerage and industrial waste has reached the limit!

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VITAL STATISTICS

Reported to the Kansas Board of Health for September, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

[illegible]

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|----------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths.* | Cases... | Deaths. | Cases... | Deaths. |
| Meade..... | | | | | | | | | | | | |
| Miami..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell..... | 2 | 2 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montgomery..... | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 |
| Morris..... | 2 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Morton..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 3 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neosho..... | 1 | 1 | 5 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osborne..... | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Phillips..... | | | | | | | | | | | | |
| Pottawatomie..... | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 1 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rawlins..... | 0 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 0 | 0 | 1 | 0 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| †Republic..... | | | | | | | | | | | | |
| Rice..... | 9 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Riley..... | | | | | | | | | | | | |
| Rooks..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Russell..... | | | | | | | | | | | | |
| Saline..... | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Scott..... | | | | | | | | | | | | |
| Sedgwick..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Seward..... | | | | | | | | | | | | |
| Shawnee..... | 0 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman..... | 0 | 0 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smith..... | | | | | | | | | | | | |
| Stafford..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stanton..... | | | | | | | | | | | | |
| †Stevens..... | | | | | | | | | | | | |
| Sumner..... | 2 | 2 | 3 | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wabaunsee..... | | | | | | | | | | | | |
| Wallace..... | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington..... | 0 | 0 | 10 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilson..... | | | | | | | | | | | | |
| Woodson..... | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| Coffeyville..... | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 |
| Independence..... | | | | | | | | | | | | |
| Kansas City..... | 13 | 5 | 46 | 10 | 10 | 0 | 3 | 0 | 0 | 0 | 0 | (|
| Leavenworth..... | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | (|
| Parsons..... | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | (|
| Topeka..... | 2 | 2 | 9 | 2 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | | | | | | | | | | | | |
| State Institutions.. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

**Fourth Annual Conference,
State, County and Municipal Health Officers.**

The fourth annual conference of state, county and municipal health officers will be held in Topeka, November 14 and 15. The first day will be devoted to the regular quarterly meeting of the State Board of Health, and the second day to the conference of health officers. The papers to be presented promise to be of unusual interest and timely importance, and all county and municipal health officers and boards of health are urgently requested to be present. A general invitation is also extended to members of the medical profession, women's clubs, manufacturers, druggists and grocers, and the general public.

The following provisional program is announced:

THURSDAY, NOVEMBER 14, 1907, 1:30 P. M.

Regular quarterly meeting of State Board of Health.

FRIDAY, NOVEMBER 15, 1907.

A. M.

- 10:00—Opening remarks by Dr. Charles Lerrigo, resident member State Board of Health, Topeka.
- 10:15—The Registration of Vital Statistics: Problems, Benefits. Dr. E. J. Lutz, secretary Municipal Board of Health, Kansas City.
- 10:40—The Relation of the Health Officer to the Public. Dr. J. W. Graybill, county health officer of Harvey county, Newton.
- 11:00—Laboratory Diagnoses. Dr. S. E. Greenfield, bacteriologist State Board of Health, Topeka.
- 11:20—The Score Card in City Milk Inspection. J. C. Kendall, state dairy commissioner, Manhattan.
- 11:40—Discussion of Papers.

AFTERNOON SESSION.

P. M.

- 2:00—The Natural Waters of Kansas. Horatio N. Parker, assistant hydrographer United States Geological Survey.
- 2:20—The Municipal Water Supplies of Kansas. Prof. W. C. Hoad, sanitary and civil engineer State Board of Health, Lawrence.
- 2:45—Sewage and Sewage Disposal. Prof. F. O. Marvin, sanitary adviser State Board of Health, Lawrence.
- 3:05—The Bacteriological Examination of Public Water Supplies—Interpretation of Findings. Prof. M. A. Barber, bacteriologist Kansas University Medical School, Rosedale.
- 3:25—The Food and Drug Law as Applied to Meat and Cereal Products. Prof. J. T. Willard, food analyst State Board of Health, Manhattan.
- 3:45—The Food and Drug Law and Its Relation to the Special Senses of Sight, Taste and Smell. Prof. E. H. S. Bajley, food analyst State Board of Health, Lawrence.
- 4:00—Some Unforeseen Problems Connected with the Enforcement of the Food and Drug Law. Prof. L. E. Sayre, drug analyst State Board of Health, Lawrence.
- 4:20—The Food and Drug Law from the Commercial Chemists' Standpoint. Rudolph Hirsch, chemist, Kansas City, Mo.

- 4:30—Inspection of the Country Slaughter-house. Dr. E. L. Simonton, county health officer Pottawatomie county, Wamego.
4:50—Discussion, led by Dr. Charles S. Huffman, county health officer Cherokee county, Columbus.
5:10—Round Table, led by S. J. Crumbine, secretary and chief food and drug inspector State Board of Health, Topeka.
5:30—Organization and election of officers.
Business. Adjournment.

State Board of Health.—Department of Food and Drugs.

CIRCULAR LETTER NO. 10.

TOPEKA, KAN., October 5, 1907.

To the Food and Drug Inspectors:

It is held by this department that the addition of color to distilled or grain vinegar is illegal, in that its use is for the purpose of making it appear like apple-cider vinegar; therefore the manufacture or sale in Kansas of distilled or grain, or any other kind of vinegar, to which color is added, is prohibited; provided, manufacturers will be permitted to dispose of such stock now on hand up to November 1, 1907, jobbers until January 1, 1908, and retail dealers until July 1, 1908.

In the meantime the purity and strength for all vinegars must be maintained up to the standards, and any sales below the standards will be considered illegal and a cause for action under the law.

Owing to the fact that most of this season's stock of pickles has been purchased by jobbers and sold to the trade for immediate and future deliveries, and further, owing to the fact of the short crop, with most of the season's pack processed with alum, it is held that dealers be permitted to dispose of such stocks up to September 1, 1908; provided, that each package shall bear on the label in legible type the statement of the presence of alum. It is also understood that any further extension of time will not be considered, and that the law pertaining to the standard quality of pickles will be rigidly enforced after the above date. S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector.

CIRCULAR LETTER NO. 11.

To the Food and Drug Inspectors:

October 15, 1907.

DECISION ON DRUGS.

1. It is held that when preparations are labeled corresponding to the official title without modification, those preparations shall be held to the official standard.

2. That it shall be the policy of this Board to encourage progress and deprecate retrogression in standards.

3. U. S. P. preparations whose non-essential constituents differ from the U. S. P., if these be properly stated on the label, may be dispensed when prescribed.

Explanation.—If, for example, fluid extract of buchu be prescribed, the U. S. P. of 1890 requires 94 per cent. alcohol as the menstruum; the 1900 U. S. P. requires 70.5 per cent. alcohol; the percentage of buchu leaves contained in both preparations is absolutely the same. If the physician prescribes fluid extract of buchu, the pharmacist is supposed to dispense the 1900 preparation, which contains the 70.5 per cent. alcohol, but if the prescriber agrees that the 1890 preparation, which contains 94 per cent. alcohol, shall be dispensed, in other words, consents to its use, such usage would be considered legal. This proposed ruling may be considered as an attempt to avoid needless financial loss of stock on hand October 1, when medicinal standards are fully maintained, but where non-essential constituents may vary from the standards formula.

4. If medicinal standards are fully maintained, and there be a slight unimportant variation in detail of manufacture or character of menstruum, such preparations may be sold if properly labeled. In no case, however, can the law be construed as permitting a substitution of such preparations for the official, or the use of the term U. S. P. or N. F. upon the labels of such preparations.

5. Preparations which vary from the official in the non-essential constituents should be labeled and described so as to clearly indicate the character of the variation. For example: Fluidextractum scillæ and fluidextractum scillæ hydroalcoholicum. The first preparation (containing acetic acid as part of the menstruum) employs the official title. The second preparation (unofficial) contains no acetic acid, indicated by the label. A further statement of course is made on the label as to the percentage of alcohol represented.

6. Preparations not of the U. S. P. standard shall not use the unmodified official title as conveying the idea that such preparations are of official standard. If, for example, a 25-per-cent emulsion of cod-liver oil is marketed (the official emulsion being 50 per cent.), a proper modification of the official title should be employed upon the label, as well as the statement on the label of the percentage of the essential ingredients.

Addition to Regulation 17.—After an extended conference with the food and drug analysts and members of the pharmaceutical profession as represented in the State Board of Pharmacy, the following exemptions are made to regulation 17:

Exemptions from the application of this provision are the following: (a) Family or domestic recipes or prescriptions for immediate or temporary use, compounded by a regular registered

pharmacist or assistant pharmacist. (b) Portions of original packages of non-official preparations which are legally labeled. (c) Toilet preparations. The label on the bottle or container of such drugs or medicines thus dispensed need only designate the contents as prescribed by regular pharmaceutical practice. This exemption, however, does not apply to original packages, or preparations put up as proprietary medicine, and offered for sale as such. Nor does it apply to such preparations as contain morphine, cocaine, chloral hydrate, acetanilid, or their derivatives.

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector.

Latent Diphtheria: A Public Health Problem.

Abstract of a paper by MYER SOLIS-COHEN, A. B., M. D., Instructor in Physical Diagnosis,
University of Pennsylvania, Philadelphia.

Causes of diphtheria prevalence.—From the public health viewpoint, diseases are studied in order to prevent their spread. Effective prophylactic measures, based on scientific observations, have caused some infectious diseases to disappear from civilized communities, while others have become comparatively rare. Yet, despite the ever-increasing knowledge as to its bacteriology and methods of propagation, diphtheria still remains a fairly common affection. Why is this?

One reason is that only the well-marked cases are isolated and placarded, while persons suffering from the milder forms of diphtheria are permitted to walk the streets, attend school, and frequent public places. The fault lies partly with physicians, who do not recognize the latent forms of diphtheria, and partly with sanitary officers, who fail to seek out and guard as sources of infection all those who are liable to transmit the disease.

The author's cases of latent diphtheria.—I have seen twenty-seven cases of latent diphtheria, most of them in my capacity as assistant medical inspector of the Philadelphia Bureau of Health. I regard as diphtheria any pathologic condition, local or general, due to infection by specific diphtheria organisms, as defined by Williams, and apply the term latent to those forms unassociated with pseudo-membrane.

Latent diphtheria as seen by other observers.—The majority of physicians, according to Chapin, are skeptical about the diagnosis when they see diphtheria without exudation and the patient not confined to bed. Mild atypical cases, however, are extremely common. Years before the discovery of the Klebs-Loeffler organism

J. Solis-Cohen, Mackenzie, Jacobi and others called attention to the occurrence of diphtheria without local deposit.

Importance of latent diphtheria from the public health standpoint.—From the public health standpoint these mild cases of diphtheria are extremely important. Indeed, Cobbett and Packard believe that from the hygienic standpoint the mild cases are more responsible for spreading the disease than are the notified cases, because no precautions are usually taken in regard to them.

Latent cases a starting-point in diphtheria epidemics.—The part played by these unrecognized cases in the production of diphtheria epidemics has been shown by many observers. Thorne, Power, Blaxall, each reporting from different English towns and parishes, have observed concurrently with and preceding and sometimes following the prevalence of unmistakable diphtheria the occurrence of a large amount of comparatively trifling sore throat, much of it never coming under medical observation, which serves as the connecting link between groups of diphtheritic attacks.

The occurrence of latent diphtheria in public schools.—Many cases of latent diphtheria have been found among school children. Of 586 children with sore throats examined, Goadby found diphtheria bacilli in 190 (3 per cent.) Chapin states that of 2038 apparently benign sore throats found in children at school in Hartford 591 (29 per cent.) gave positive cultures. Parkes examined 3000 sore throats and found diphtheria bacilli in 343 (14.3 per cent.) Berry and Washbourn report the persistence for two months of a series of mild sore throats following the introduction of diphtheria into a girls' school. At intervals of one month a number of cases of true diphtheria would occur. Washbourn then examined all the scholars with any degree of sore throat and discovered diphtheria bacilli in seventeen. Williams reports the occurrence of a case of true diphtheria contracted in a school from a boy convalescent from tonsillitis, who had an unduly frequent pulse and whose nose contained diphtheria bacilli.

The control of latent diphtheria by the health authorities.—The cases cited from my personal experience and those reported by other observers prove that diphtheria may occur in a latent form which is just as contagious as are the more marked cases with membrane, and consequently more dangerous to the public health.

The duty of the sanitary authorities to protect the public from patients with diphtheria applies to mild as well as to severe cases. There are few arguments for municipal control of well-marked cases that do not apply with equal force to the latent forms. The danger

to the community of a diphtheria patient does not depend on the severity of the infection, but on his liability to transmit the disease.

I believe, therefore, that the health authorities should insist on strict isolation of latent cases of diphtheria.

When a patient with typical membranous diphtheria is isolated at home, a placard announcing the presence of the disease should, of course, be posted at each entrance. In latent cases, however, this placard might be omitted, provided strict isolation is maintained to the satisfaction of the health authorities.

Bacteriologic tests required for removal from isolation. If the isolation of either severe or mild cases of diphtheria is to be of practical value in preventing the spread of the disease, it must continue until the specific bacilli have permanently disappeared from the throat. The danger that an individual may be a focus of infection remains so long as he carries the germs about. The great variation in the persistence of these organisms makes the adoption of a time limit from the disappearance of the membrane, as practiced in Providence, ineffective in typical cases and impossible in latent forms.

The only method of discovering whether or not the organisms have disappeared from the throat is by taking cultures. One culture alone, however, as shown by Graham-Smith and Wells, has not been found a sufficiently reliable index as to their complete disappearance.

Measures insuring the recognition of latent diphtheria.—The control of known latent cases of diphtheria by the sanitary authorities, however, will not of itself sufficiently protect the public health. Quite as important is the recognition of the latent forms. These, it has been shown, are usually mistaken for cases of tonsilitis and pharyngitis, from which they can be differentiated only by means of cultural tests. Tonsilitis and pharyngitis should be included, therefore, among the diseases to be reported or "notified." When so reported, the physician should be requested to take a culture of the throat, and should be offered the services of the health department in case he does not desire to take the culture himself. Park and Beebe, and Westbrook, declare it justifiable in such cases to assume that the bacilli are virulent and hence dangerous. On the finding of diphtheria-like bacilli, therefore, in a case of tonsilitis or pharyngitis, that case should be regarded as one of latent diphtheria and managed accordingly, unless the bacilli be shown by inoculation into guinea-pigs not to be virulent.

A child who has been absent from school on account of sore

throat should not be permitted to return until a culture of the throat has been taken. When this has been neglected by the attending physician, it must be done by the medical inspector. If this first culture is negative the child may at once resume attendance. If, however, it proves positive, the exclusion must be maintained until two successive negative cultures have been obtained. A similar regulation is now in force in London during diphtheria epidemics.

Terminal disinfection.—Not only must latent forms of diphtheria be discovered and be subjected to municipal control, but in order to check the dissemination of diphtheria all the known avenues of contagion must be cut off whenever the disease appears, whether in severe or latent form.

The most commonly employed prophylactic measure in addition to isolation is terminal disinfection.

Inasmuch as the presence of diphtheria bacilli have been demonstrated by Hill, Gorham, and others, in a small percentage of infected objects, I think it wise to disinfect, with their contents, all rooms that have been occupied by a patient suffering from either severe or latent diphtheria. It should nevertheless be realized that this alone will have little effect in preventing the spread of the disease if no precautions are taken to prevent healthy persons, with virulent bacilli on their mucous membranes from mingling with other people. Consequently, I believe that terminal disinfection should be postponed until all members of the household have been shown by bacteriological examination to be free from diphtheria bacilli.

The control of persons residing in the same house with a diphtheria patient.—A difficult problem confronting the health authorities in their endeavors to limit the spread of the disease is the control of those who are in more or less intimate contact with the patient. Whoever comes in intimate contact with the patient is advised, while in the sick-room, to wear a gown reaching from the neck to the floor and a cap covering the hair, and on leaving the room to disinfect the face and hands. In neither case is any attempt made to determine the presence or absence of diphtheria bacilli on the mucous membranes of those persons. Yet it is well known that healthy persons who have been in contact with diphtheria may carry the germs on their mucous membranes without becoming sick themselves, though they are capable of transmitting the disease to others. Such persons are known as "carrier" cases and infected "contacts." The germ-laden throats of the infected

"contacts" constitute a far greater source of danger than do their garments. Persons residing in an infected house should be prohibited from attending school or from working at any employment in which they are brought in contact with other people or with articles of food, wearing apparel and the like, and from frequenting public places. But these restrictions should not be removed until bacteriologic examination has shown the absence of diphtheria bacilli on their mucous membranes.

That municipal control of infected "contacts" residing in an infected house is not, as objectors urge, impracticable is proved by the fact of its effective operation in many cities. The Bureau of Health of Philadelphia, for instance, excludes from work all inmates of houses in which diphtheria exists who are employed in the manufacture or sale of clothing, house furnishings, or food-stuffs, whether breadwinners or not, and does not permit them to return to work until after the house has been disinfected and the placard removed, unless they change their places of residence and submit to other specified regulations for safeguarding the public health.

The control of infected "contacts" or "carrier" cases not residing in an infected house.—It is recognized by all that many perfectly healthy individuals with normal throats harbor diphtheria bacilli; a still larger number are said to harbor the so-called pseudo-diphtheria bacilli. Consequently the control of "carrier" cases in which the infected individuals do not reside in an infected house presents many practical difficulties. The opinions of sanitarians differ greatly, not only as to the character of municipal supervision required for such cases, but as to whether or not any control at all is desirable. This lack of unity is a consequence of the divergent views held by bacteriologists concerning the so-called pseudo-diphtheria bacilli.

Those believing in the existence of two distinct organisms see many points of difference between the Klebs-Loeffler bacillus and the so-called Hoffman bacillus. The bacteriologists, however, who insist on identity, argue that the properties of the different forms of the diphtheria organism are unstable and varying, one form readily assuming the characteristics of another form. Among the points of difference given may be mentioned the morphologic appearance of the organisms, their appearance with Neisser's and with Gram's methods of staining, the appearance of their growth in bouillon and on solid media, their production of acid in glucose and in broth cultures, and their virulence when inoculated into guinea-pigs. Other tests are the agglutination test, fermentation

tests in the serum-water media of His, animal inoculations controlled by antitoxin, vaccination against diphtheria, with the aid of pseudo-diphtheria bacilli, the power to hemolyze the rabbit's corpuscles, the bactericidal action of diphtheria antitoxin on diphtheria bacilli, and the application of specific sera to neutralize specific toxins.

A difference of opinion, nevertheless, exists among laboratory workers concerning every method of differentiation suggested in which the attempt has been made to verify the findings of the original observer.

While in view of such a conflict of authorities the sanitarians will admit that academically the identity of separateness of the diphtheria and pseudo-diphtheria bacilli is an open question, in practice he must err, if at all, on the safe side. The measures he enforces must be such that the public health will be protected, no matter which bacteriologic view is correct. At the same time he must be careful to avoid all restrictive regulations not justified by the facts or required by the necessities.

Persons harboring diphtheria bacilli should be warned that they are a source of danger to others, instructed to take certain precautions, induced to use antiseptic mouth-washes and gargles, and kept under observation.

Sanitarians, such as Abbott, Caiger, Cobbett, Dunham, McFarland and Babcock, Westbrook and his associates, and others, regard a well individual with diphtheria germs in his throat as such a grave menace to the health of those with whom he comes in contact that they recommend his isolation. They believe that while such action unquestionably causes inconvenience to the individual, it is necessary for the general good.

I believe that the health authorities may properly disregard the presence of diphtheria-like bacilli in the throats of healthy persons who have not been in direct or indirect contact with a case of diphtheria, membranous or latent, and who have not themselves suffered recently from sore throat. It has been demonstrated by many investigators that virulent bacilli are seldom if ever present in the throats of healthy persons who have not been in contact with cases of diphtheria or with infected "contacts." The diphtheria-like bacilli found in healthy persons who have not been subjected to such contact are practically always non-virulent, and such persons consequently are not a source of danger. In regarding a person harboring diphtheria bacilli as healthy or normal, the possibility that such a one may be convalescing from a recent attack of latent diphtheria must be borne in mind.

When, therefore, healthy persons who have been exposed to diphtheria, although not residing in an infected house, are found to have diphtheria-like organisms in their throats they should be subjected to the same restrictions that govern infected "contacts" residing in the same house with a diphtheria patient. They should be excluded from work or school, and prevented from mingling with other people until free from the bacilli, as determined by two successive negative examinations. Such restrictions, however, should not be enforced in any case in which the organisms have been proven by inoculation tests to be non-virulent, although it is questionable whether or not the state or municipality should be put to the trouble or expense of making inoculation tests in the case of infected "contacts."

Detection and isolation of infected "contacts" in school.—It will be impossible to detect all "carrier" cases in a community without making bacteriologic tests of every one—an impracticable procedure in large cities. There are certain classes of intimate "contacts," however, who can be examined for the presence of diphtheria organisms.

Most writers are agreed that in a school cultures should be taken of all "contacts," and those found to be infected should be excluded and isolated. By such means Cobbett stamped out epidemics in Cambridge and Colchester; Westbrook and his assistants were able to check the spread of the disease in Minnesota; and O'Hara, an assistant medical inspector, practically rid two Philadelphia public schools of diphtheria which for months had been unduly prevalent there. When, therefore, diphtheria develops in a child who is attending school or who has been recently in attendance, cultures should be taken from the throats of all the pupils and of the teacher in that child's classroom. All persons who are found to harbor diphtheria bacilli must be excluded from school, and treated as infected "contacts" until they are shown by bacteriologic tests to be free of the germs.

Detection of infected "contacts" in industrial establishments.—I believe that many "carrier" cases become infected by fellow workers in the shop or mill. I strongly recommend, therefore, that when a case of diphtheria develops in an industrial establishment all those who were in more or less contact with the patient, certainly all who were in immediate contact, be examined bacteriologically. This method of procedure will not only cut off further avenues of contagion when followed by the exclusion and isolation

of those found infected, but may often discover the source of the original clinical case.

CONCLUSIONS.

1. The prevalence of diphtheria is due to the lack of control over latent cases of diphtheria and over the so-called "carrier" cases.

2. Diphtheria may occur in a latent form without pseudo-membrane and with only slight symptoms.

3. Latent cases of diphtheria should be isolated until two successive negative cultures have been obtained.

4. All cases of sore throat should be reported to the health authorities and should be examined bacteriologically.

5. Infected "contacts" should be excluded from school or work and should not be permitted to frequent public places until two successive cultures have proved negative.

6. All who have been in contact with a diphtheria patient, whether at home, at school or at work, should be examined bacteriologically.

7. Disinfection of fomites and terminal disinfection of rooms and their contents is insufficient and reliance thereon treacherous. Animate carriers of infection are more dangerous than the inanimate.

The Abuse of the Guaranty Label.

The attention of the Board has been called to the action taken by some manufacturers, and possibly by a few jobbers, in regard to the issuing of special serial guaranty labels for foods and drugs, the sale of which was made previous to January 1, 1907.

It should be clearly understood that such labels do not protect dealers in such articles in this state. Attention should be called to the fact that such practice is a misapplication of the federal and state laws. A United States serial number covers goods that enter interstate commerce, and is of service only on such goods as entered interstate commerce after the food and drugs law went into effect. The use of a serial number, either national or state, is clearly a misuse if attached to an article sold before January 1, 1907, as such practice tends to lead the dealer and consumer to believe that they conform to the national or state law, when, as a matter of fact, they may not.

Attention is called to the following food-inspection decision, No.

70, United States Department of Agriculture, entitled "The Abuse of Guaranty for Advertising Purposes":

(F. I. D. 70.)

ABUSE OF GUARANTY FOR ADVERTISING PURPOSES.

The attention of the Department has been called repeatedly of late to the abuse, for advertising purposes, of the serial number assigned to a guaranty. The Department of Agriculture accepts no responsibility for the guaranty which the manufacturer or dealer files. Particular attention must be paid to the fact that it must neither be directly stated nor implied in any fashion that the Department of Agriculture or the United States Government guarantees or indorses the products to which the guaranty and serial number are attached. *The guaranty represented by the serial number is the guaranty of the manufacturer and not of the Government.*

To facilitate business a serial number is assigned to this guaranty, and the guaranty is filed in the Department of Agriculture for the purpose of verifying the serial number when it is used on packages of goods.

The misuse of the serial number is a misrepresentation, and in each case of such an abuse the serial number will be withdrawn and the guaranty returned after proper notice. Serial numbers, however, which have been issued and passed into commerce prior to withdrawal will be respected by the Department in any action which may be brought against dealers selling goods bearing the number which is improperly used.

The attachment of the serial number or guaranty to articles which are not foods or drugs is also regarded as a misrepresentation on which a similar action will be based.

H. W. WILEY,
FREDERICK L. DUNLAP,
GEO. P. MCCABE,
Board of Food and Drug Inspection.

Approved, JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., May 14, 1907.

The Kansas law carrying practically the same provision that the federal law does, the abuse of guaranty labels as above described applies with equal force.

S. J. CRUMBINE, M D,
Chief Food and Drug Inspector.

The ideal day: "When a day is earnest with its purpose, when a day is sweetened with sympathy and tenderness."—*Dr. S. S. Estey.*

When you're feelin' grouchy
Let the sunshine in;
When your face gits feelin' hard,
Crack it with a grin.
Don't be 'fraid o' wrinkles,
Tear loose with your mirth;
An old face laughter-wrinkled
Is the sweetest thing on earth.

—*Medical Herald.*

THE LUXURY OF TYPHOID FEVER.

"If tuberculosis is the most imperative problem in public health, typhoid fever is the simplest and the least excusable. * * * Not only is it a long, tedious and grave illness, often leaving in its wake lifelong disabilities, but it is also one of the most expensive of ailments. The average city of 100,000 inhabitants wastes, perhaps, half a million dollars a year on the luxury of having it, and probably a hundred thousand dollars more in efforts to avoid it. That amount of money properly spent would practically eradicate the disease. We have seen it done in the principal European cities; yet with the unprogressiveness in matters of public health which so strangely contrasts with the forwarding American spirit, our cities have continued to poison themselves and each other."

* * * * *

"Every man is concerned, immediately or prospectively, in typhoid fever, for every man, sooner or later, experiences the needless suffering it inflicts, if not through himself, then through his family, his friends, his business interests, or the taxes he pays."

SAMUEL HOPKINS ADAMS,

—in *McClure's*.

BULLETIN

OF THE

Kansas State Board of Health.

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No. 11.

NOVEMBER, 1907.

VOL. 3.

Have you made good?

The food of the child determines the future of the citizen and the physical strength of the potential fathers and mothers of the state.—*George W. Goler, M. D.*

The problem, how best to improve the condition of the people, is a biologic rather than an economic one; the establishment of a sound national physique is more important than a sound national finance.—*J. Gray.*

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VITAL STATISTICS

Reported to the Kansas Board of Health for October, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|-------------------------------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|-----------|-----------|-----------|----------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| The State... total, October, 1906..... | 90 83 | 50 46 | 350 236 | 59 46 | 220 530 | 24 48 | 115 100 | 4 3 | 65 38 | 0 0 | 91 12 | 0 0 |
| Allen | 2 | 0 | 16 | 3 | 2 | 0 | 4 | 0 | 8 | 0 | 0 | 0 |
| Anderson | 0 | 0 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 0 | 0 | 4 | 1 | 0 | 0 | 14 | 1 | 0 | 0 | 0 | 0 |
| Barber | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barton | 5 | 5 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bourbon | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brown | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 47 | 0 |
| Butler | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chase | 1 | 0 | 0 | 0 | 12 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| Chautauqua | 1 | 1 | 2 | 2 | 6 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| Cherokee | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Cheyenne | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clark | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Clay | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Cloud | 1 | 0 | 7 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Coffey | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Comanche | 0 | 0 | 2 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cowley | 4 | 4 | 2 | 2 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 |
| Crawford | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 |
| Decatur | 1 | 1 | 26 | 1 | 9 | 2 | 2 | 0 | 1 | 0 | 0 | 0 |
| †Doniphan | 2 | 1 | 7 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 31 | 0 |
| Douglas | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| *Edwards | 2 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Elk | 1 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Ellis | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellsworth | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finney | 0 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ford | 3 | 3 | 2 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Franklin | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Geary | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grant | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gray | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greely | 0 | 0 | 13 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greenwood | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hamilton | 2 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| *Harper | 1 | 1 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Haskell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Jackson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jefferson | 1 | 1 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Jewell | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Johnson | 0 | 0 | 2 | 0 | 7 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| Keary | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kingman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Kiowa | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Leavenworth | 1 | 1 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 0 | 0 | 1 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linn | 0 | 0 | 6 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Lyon | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| Marion | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Marshall | 0 | 0 | 3 | 1 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| McPherson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Meade..... | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Miami..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell..... | 0 | 0 | 7 | 1 | 7 | 1 | 81 | 0 | 0 | 0 | 0 | 0 |
| Montgomery..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Morris..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Morton..... | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 3 | 3 | 2 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Neosho..... | 1 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Osage..... | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Osborne..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pawnee..... | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips..... | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie..... | 1 | 1 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 0 | 0 | 2 | 0 | 0 | 0 | 6 | 0 | 7 | 0 | 0 | 0 |
| Rawlins..... | 1 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 1 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rice..... | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Riley..... | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rooks..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Saline..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Scott..... | 2 | 2 | 1 | 0 | 6 | 3 | 8 | 0 | 1 | 0 | 0 | 0 |
| Sedgwick..... | 0 | 0 | 4 | 0 | 12 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| †Seward..... | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 12 | 0 | 0 | 0 |
| Shawnee..... | 0 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman..... | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smith..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stanton..... | 2 | 2 | 5 | 1 | 20 | 4 | 4 | 0 | 0 | 0 | 0 | 0 |
| †Stevens..... | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sumner..... | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Trego..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wabaunsee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wallace..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Washington..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wilson..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 |
| Woodson..... | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 4 | 0 | 12 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Coffeyville..... | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Independence..... | 11 | 8 | 35 | 5 | 24 | 4 | 6 | 0 | 1 | 0 | 0 | 0 |
| Kansas City..... | 0 | 0 | 2 | 1 | 8 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Leavenworth..... | 4 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 |
| Parsons..... | 4 | 4 | 5 | 4 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Topeka..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| State Institutions.. | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*No report.

†No contagious diseases in county.

‡No health officer.

FOOD ANALYSES NO. XI.

By E. H. S. BAILEY, PH. D., Food Analyst for Board, and Prof. H. L. JACKSON.

LAWRENCE, KAN., November 23, 1907.

We have to report the following analyses and examinations, made in the chemical laboratory of the University of Kansas:

BEVERAGES.

No. 5025. Hopine, manufactured by M. K. Goetz Brewing Company, St. Joseph, purchased at Hutchinson by John Kleinhans, inspector, October 10, 1907. Analysis showed it to contain one per cent. of absolute alcohol by volume.

No. 7023. Regal, put up by Fort Scott Bottling Works, purchased by A. G. Pike, inspector, October 3, 1907. This contained less than one per cent. of alcohol by volume.

No. 11013. Rochester Malt Beer, manufactured by Rochester Brewery, Kansas City, Mo. Purchased as above. This sample contained 2.1 per cent. of absolute alcohol by volume.

No. 11014. Rochester Malt Beer, manufactured by Rochester Brewery, Kansas City, Mo. (Large bottle.) The sample contained 2.2 per cent. absolute alcohol by volume.

No. 7022. Strawberry Soda, manufactured by the Fort Scott Bottling Works, purchased by A. G. Pike, inspector, October 3, 1907. This sample is misbranded. It is artificially colored and flavored, and there is no statement to this effect on the label.

No. 6008. Artificial Ginger Ale, manufactured by the Eagle Bottling Works, Kansas City, purchased by H. Bell, inspector, September 4, 1907. No alcohol or other preservatives were found. Saccharine was present. Artificially flavored and colored. This sample is misbranded, as it is colored red with coal-tar color, and there is no statement on the label to this effect, the only statement being "artificial strawberry soda." The fact that the color and flavor are both artificial should be distinctly stated.

No. 801. Malto-Tone, purchased by J. F. Tilford, inspector, of Emil Logbach, North Star Drug Store, Salina. Sold by the McPike Drug Company, Kansas City, Mo. On the original label is a statement indicating its value as a medicine. Below this is a guaranty under the food and drugs act, and stating that it is *not* intended for the cure or mitigation of any disease. Manufactured by Kansas City Breweries Company, Kansas City, Mo. This sample contains 4.9 per cent. of absolute alcohol by volume.

No. 802. Malto-Tone, purchased by J. F. Tilford, inspector,

October 23, of J. H. Benson, Salina. Sold by the McPike Drug Company, Kansas City, Mo. On the original label is a statement indicating its value as a medicine. Below this is a guaranty under the food and drugs act, and stating that it is *not* intended for the cure or mitigation of any disease. Manufactured by Kansas City Breweries Company, Kansas City, Mo. This sample contains 5.15 per cent. of absolute alcohol by volume.

No. 803. Prima-Tonic, "a highly concentrated fermented malt liquor extract of malt, hops and wildwood honey," brewed by the Independent Brewing Association, Chicago. Purchased of W. B. Jennings, Clay Center. The label states this to be valuable as a medicine. This sample contains 5.45 per cent. of alcohol by volume, and 9.23 per cent. of extractive matter. It is artificially colored. Sample was purchased by J. F. Tilford, inspector. No statement on the bottle giving percentage of alcohol contained.

EXTRACTS.

Many of the extracts upon the market are of very low grade, and are misbranded and a fraud upon the consumer. Some of the lemon extracts mentioned below contain scarcely a trace of oil of lemon, and they are very little better for flavoring purposes than water, although they are colored yellow with a coal-tar dye. The labels are intentionally deceptive. Even those that are up to the standard required by the United States Department of Agriculture are, many of them, marked as though they were double strength, or even triple strength. There has been so much fraud in goods of this class that we cannot form any opinion as to the contents of the bottle by the statement upon the label. Usually, the brighter the color of an extract of lemon the poorer the quality; that is, the artificial coloring is added to cover up the absence of alcohol and of the oil of lemon which is held in solution by this alcohol.

In regard to extracts, both artificial and natural, the trade may expect that the Board of Health will very soon issue rigid standards for their manufacture.

No. 7014. Watkins' Extract of Vanillin, purchased August 26 by A. G. Pike, inspector, made by J. R. Watkins Medical Company, proprietors of Watkins' Remedies, Winona, Minn. This is evidently an imitation of the genuine vanilla extract, having added color and considerable body. It also contains coumarin, a fact which is not stated on the label. Misbranded.

No. 5085. Hewson Concentrated Triple Flavoring Extract (of Lemon), manufactured by C. A. Murdock Manufacturing Company, Kansas City, Mo., purchased by John Kleinhans, inspector. On

the carton, but not on the label, is the statement: "One oz., full measure." This measures slightly over one ounce. The sample contains 6.8 per cent. of oil of lemon. As it is marked *triple extract*, it should contain fifteen per cent. of oil of lemon. It is artificially colored, and there is no statement to that effect on the bottle. It is misbranded.

No. 5087. Comet High-grade Extract of Lemon, Comet Extract Company, St. Louis, Mo. This sample contains, practically, no oil of lemon and scarcely any alcohol, and has very little flavor at all to the taste. Instead of being a high-grade extract it is no extract at all. It is artificially colored and is misbranded, as well as below the standard.

No. 5089. Ayer's Extract of Lemon, purchased by John Kleinhans, inspector. Contains only a small quantity of alcohol, and not enough oil to be measured. This sample is misbranded.

No. 7029. Revolution Extract of Lemon, purchased by A. G. Pike, inspector, manufactured by W. H. Hoyt Company, Chicago. The content is not stated on the bottle, but it is slightly less than one ounce. Sample contains 5.4 per cent. of oil of lemon by volume. Passed.

No. 7031. Dr. Seeley's Triple Extract of Lemon, Abilene, Kan., purchased by A. G. Pike, inspector. This contains 2.3 per cent. of oil. It is not only not a triple extract (which should contain fifteen per cent.), but is not even a standard extract, which should contain five per cent. It is misbranded.

No. 5058. The label reads, "2 ounces, full measure, Gillett's Double Extract Lemon, warranted pure." E. W. Gillett, Chicago. Purchased by John Kleinhans, inspector, October 21, 1907. The contents of the bottle fulfilled the statement as to quantity. There was found to be 5.4 per cent. of oil of lemon. This sample is misbranded, as it does not contain 10 per cent., which would be twice the amount of oil of lemon required by the standard of the United States Department of Agriculture. The word "double" should be struck out.

No. 7013. Eddy's Double Strength Extract of Lemon, Eddy & Eddy, St. Louis, purchased by A. G. Pike, August 28, 1907. Content of bottle, not stated, was found to be 1.45 fluid ounces. This sample contained 0.4 of 1 per cent. of oil of lemon. A double-strength extract would contain 10 per cent. of oil. Illegal.

No. 7015. Duncombe's Triple Extract of Lemon. Trade-mark F. A. D., "full measure." Purchased by A. G. Pike, inspector, August 20, 1907. There is no statement on the bottle as to quantity contained, but this was found to be 2.6 ounces. The amount

of oil of lemon was extremely small, and at most only 0.3 of 1 per cent. A triple extract would contain 15 per cent. Illegal.

No. 3159. Nectar Extract of Lemon, St. Louis Coffee and Spice Mills. On the bottle is the statement: "We guarantee Nectar Extracts to be of the best quality and full strength. They are pure, and therefore comply with all pure food laws." This contained 2.5 per cent. of lemon oil. Illegal.

MEATS CONTAINING CHEMICAL PRESERVATIVES.

LAWRENCE.

No. 5028. Hamburg steak, purchased of Wm. Messenheimer, 845 New York street, October 22, by John Kleinhaus, inspector. Contains sulfites. Illegal.

No. 5068. Hamburg steak, purchased of J. S. Schleifer, 840 Massachusetts street, October 22, by John Kleinhaus, inspector. Passed.

No. 5063. Hamburg steak, purchased of Chas. Thudium, 820 Massachusetts street, October 22, by John Kleinhaus, inspector. Contains sulfites. Illegal.

No. 5067. Hamburg steak, purchased of Chas. L. Hess, 941 Massachusetts street, October 22, by John Kleinhaus, inspector. Contains sulfites. Illegal.

IOLA.

No. 5073. Hamburg steak, purchased of Otto Henze, October 28, by John Kleinhaus, inspector. Contains sulfites. Illegal.

CHANUTE.

No. 5077. Hamburg steak, purchased of J. H. Steadman, October 29, by John Kleinhaus, inspector. Contains sulfites. Illegal.

PARSONS.

No. 5081. Hamburg steak, purchased of Maurer Bros., November 5, by John Kleinhaus, inspector. Contains sulfites. Illegal.

No. 5083. Hamburg steak, purchased of Van Meter Bros., November 6, by John Kleinhaus, inspector. Contains sulfites. Illegal.

GALENA.

No. 5093. Hamburg steak, purchased of V. West, November 9, by John Kleinhaus, inspector. Contains sulfites. Illegal.

OLATHE.

No. 5094. Hamburg steak, purchased of Ostrander, Nichols & Hershey, November 12, by John Kleinhaus, inspector. Passed.

No. 5095. Boneless chucks, purchased of Ostrander, Nichols & Hershey, November 12, by John Kleinhaus, inspector. Passed.

KANSAS CITY, KAN.

No. 5096. Hamburg steak, purchased of Taylor & Robinson, 508 Minnesota avenue, November 13, by John Kleinhaus, inspector. Contains sulfites. Illegal.

No. 5097. Hamburg steak, purchased of Ronayne, Minnesota avenue, November 13, by John Kleinhaus, inspector. Passed.

No. 5098. Hamburg steak, purchased of J. W. West meat-market, November 13, by John Kleinhaus, inspector. Contains sulfites. Illegal.

No. 5099. Hamburg steak, purchased of P. B. Dietz meat-market, November 13, by John Kleinhaus, inspector. Contains sulfites. Illegal.

No. 5100. Hamburg steak, purchased of B. A. Jackson & Co., 408 Minnesota avenue, November 13, by John Kleinhaus, inspector. Contains sulfites. Illegal.

SAUERKRAUT.

LAWRENCE.

No. 5062. Purchased of W. A. Guenther, 721 Massachusetts street, (manufactured by Pickert Pickle Company, Leavenworth,) October 22, by John Kleinhaus, inspector. Passed.

No. 5066. Purchased of Hunzicker & Wahrenbrock, (manufactured by H. K. Heintz, Pittsburg, Pa.,) October 22, by John Kleinhaus, inspector. Passed.

MEAT CURES.

There are a number of cures or preservatives for meat upon the market which are practically very little else than the ordinary substances used by the farmer and butcher, such as common salt and saltpetre. These are put up in small packages under proprietary names.

No. 3143. White Konseverungs Salt, manufactured by B. Heller & Co., Chicago, purchased by John Kleinhaus, inspector. This powder contains about 81 per cent. of common salt and some nitrates. Borax and sulfites were not found.

No. 7021. Danish Cure, manufactured by the Water Witch Manufacturing Company, Oklahoma City, Okla., purchased by A. G. Pike, inspector, October 2. This sample contained about 80 per cent. of common salt, some saltpetre (potassium nitrate), and some sulfates.

No. 3144. Lard Purifier, manufactured by the Water Witch Manufacturing Company, Oklahoma City, Okla. This consists essentially of 46 per cent. of sodium chloride and 44 per cent. of sodium carbonate, with small quantities of sulfates.

CANNED CORN.

No. 7027. Put up by the Sibley Canning Company, Hoopertown, Ill., marked "Reprocessed unbleached." Purchased by A. G. Pike, inspector, October 10, 1907. No preservatives were found, but the material is of very poor grade and has the appearance of being soaked corn, in which case the label, "Reprocessed" sweet corn, would be incorrect.

DRUG ANALYSES, NO. VII.

By L. E. SAYRE, PH. M., Director of Drug Analysis for the Board.

LAWRENCE, KAN., November 20, 1907.

I herewith present to you a report on the work that has been accomplished in the drug laboratory since the last report:

COFFEE.

A number of samples of coffee sent to this department and reported on February, 1907, have been further investigated for the alkalinity of ash. The ash content was reported upon, but the alkalinity was not determined. We have since made a determination as outlined by the Bureau of Chemistry, Bulletin No. 90. It is fair to assume that the results given indicate the average alkalinity of the coffees sent to us on the above-mentioned date.

| Sample No. and Name. | Per cent. water soluble. | Per cent. HCL soluble. | Alkalinity of— | |
|-------------------------------|--------------------------------|------------------------------|---------------------|------------------|
| | | | 1 gm. of sample. | 1 gm. of ash. |
| 1529 Santos, 20c..... | 72.92 | 93.69 | 3.49 cc. | 88.5 cc. |
| 1532 Maracaibo, 25c..... | 74.82 | 93.94 | 3.49 cc. | 82.1 cc. |
| 1533 Bourbon Santos, 25c..... | 78.56 | 95.93 | 3.82 cc. | 82.9 cc. |
| 1535 African Java, 30c..... | 71.48 | 90.55 | 3.03 cc. | 71.3 cc. |

No. 1562. Doctor Floyd's Headache Powders. One powder wrapped in blue paper contained in a red-colored envelope with printed directions. The content of this powder was a pure white crystalline glistening powder. On chemical examination the substance proved to be cocaine hydrochloride. The quantity contained in the paper was 0.6 gms.

No. 1563. Doctor Floyd's Headache Powders. The envelope contained four powders wrapped in white paper. On chemical examination these powders were found to be principally acetanilid, giving the reactions characteristic of this as described in the U. S. P.

No. 1564. Areca Nut Powder. The chemical examination of the sample sent us, gave 0.13 per cent. of fat, and 1.44 per cent. of ash. These results are both within the limits for pure areca nut. Confirmatory tests and microscopical examination gave the conclusion that the sample was genuine areca nut.

No. 1566. Compound Cayenne, 2-oz. paper carton. A very fine reddish powder, color almost identical with capsicum. Appears clean and free from brick dust or ground nut-shells. A microscopical examination shows a large per cent. of capsicum associated

with starch. The oleoresin content of the mixture was 8.7 per cent. The conclusion is that the sample is a comparatively pure mixture of a variety of capsicum with starch.

No. 1567. Hair Remover (depilatory). On examination this was found to be composed of resin, wax and lard, with some coloring matter. Scarcely any inorganic matter present. Our conclusion is that this substance is a kind of sealing-wax, and its virtue lies in the fact that when applied as directed it pulls out the hairs mechanically.

No. 1594. Pure buckwheat-flour. A microscopical examination of the sample sent us proves it to be true to label.

Nos. 1569 to 1593. These numbers correspond to an invoice of patent medicines reported as "orphans," which are known to be almost synonymous with dead stock, being old preparations whose proprietors have either quit the manufacture of them or have gone out of business. We shall report upon these various preparations at a later date, when we have had opportunity to examine them chemically. We might state that some of these articles are badly misbranded because of the fact that they are stated to be "positive cures." Very few of them contained any amount of alcohol; one, however, is tolerably fair whisky; another one of the articles, claiming to be a blood tonic, is stated to act as an absolute cure for certain diseases, and operates in a chemical as well as electrical way. A few of the materials are unquestionably so deteriorated that they ought not to be sold, and it is to be regretted that the retail druggists should be loaded with such unprofitable material and not have some recourse in the way of rebate from the proprietors who would put out such goods. It is to be hoped that when the pure food and drug law is carried out in the proper spirit that the retailer will be taught to secure protection against such goods. If he is persuaded by the manufacturer to be the purveyor of such patent medicines, the character of which is absolutely concealed from view by ornamented wrappers and cartons, he should also be persuaded to secure from these manufacturers protection against loss from deterioration. The majority of the dead stock we are examining, judging from physical appearance, belongs to such deteriorated material.

It is not every calamity that is a curse, and early adversity is often a blessing. Surmounted difficulties not only teach, but hearten us in our future struggles.—*Sharpe*.

Bacteriological Examination of Public Water Supplies.

Read before the Fourth Annual Conference of State, County and Municipal Health Officers,
by Prof. M. A. BARBER, Bacteriologist Kansas University.

I shall aim, so far as I can, to give this paper a practical bearing on the question, now of much interest to the people of the state—the betterment of municipal water supplies. In following this course I may go over ground familiar to many of you. I therefore beg the indulgence of those whom I will lead over a much-trodden path, trusting that the presentation of well-known facts and methods may, in view of our present needs, be acceptable in the place of less commonplace matter.

In the first place, what are the bacteriological findings with which we deal in water analysis? We may roughly divide these findings into two classes: First, those having to do with the kinds of bacteria found in water—the qualitative tests; second, those having to do with the numbers of bacteria—the quantitative tests. As regards the kinds of bacteria, the ones of most significance are those which are commonly found in the intestinal tract of man or of lower animals, bacteria that are either pathogenic or important as indexes of sewage pollution. The pathogenic bacteria commonly borne by drinking water are the typhoid bacillus, the spirillum of Asiatic cholera, and a group of bacilli which have to do with diarrhoeas and various intestinal disorders. Of these microorganisms the search in waters has been most commonly directed to the typhoid bacillus; but the difficulties of detecting this bacillus in water are so considerable, and the probabilities of its disappearance from the polluted water before the sample reaches the bacteriologist are so great, that it is generally a waste of time to try to find it in a well or municipal supply. So the energy of the analyst is directed to the detection of more hardy and abundant forms, the presence of which in water is a reliable index of the sort of pollution likely at any time to be the origin of a typhoid or other epidemic. Of these intestinal bacteria the bacillus *Coli communis* is generally regarded as the best index. Its characteristics are readily recognized, and the fact that it is almost invariably present in the digestive tract, and that it does not develop to any great extent outside of the intestines, unless in polluted soil or water, makes it a reliable index of sewage pollution. So when we find the bacillus *Coli communis* in any numbers in water we know that there is a short circuit somewhere between the sewer and the well or reservoir.

Of the other intestinal bacteria the *streptococcus* is also sought for in waters suspected of pollution. But the methods of its detection are not so well worked out, and it does not persist in water under some conditions so long as the colon bacillus. Further, it has been found to pass through filters and sedimentation basins which are apparently effective in eliminating typhoid and other pathogenic bacilli; so the search for this microbe in water is not generally regarded as so profitable as for the colon bacillus.

In the use of the colon bacillus as an index we must keep in mind that it may be found in the intestinal discharges of the lower animals as well as of man, and that it is important to determine its relative abundance in the water examined. Both of these considerations have much bearing on our final interpretation of results.

The determination of the numbers of bacteria without regard to kind, or, more precisely, the numbers which can be demonstrated by certain standard methods, is, under certain conditions, a valuable index of purity. If a test of water before and after filtration, sedimentation or other purifying process shows that there is a reduction of 99 per cent. in all bacteria, it may be safely concluded that there would be a removal of at least 99 per cent. of typhoid or other pathogenic bacteria. Frequent quantitative tests of a municipal supply are a valuable index of the varying efficiency of the purification process, or of variations in the quality of the raw water. But the numbers of bacteria per cubic centimeter which may be regarded as allowable in a safe water vary greatly, depending on the source of the water; and a single quantitative test, however carefully made, is rarely of much value unless all data regarding the source of the water are at hand.

The aim of the bacteriologist then is the detection in water of bacteria associated with animal excreta and the determination of the numbers, in a given unit of water, of the bacteria which can be demonstrated by certain standard methods.

In the matter of the interpretation of the laboratory findings I wish, at the beginning, to lay emphasis on this point: these findings, whether bacteriological or chemical, must, in order to be valid, be taken in connection with all data bearing on the source of the water, the surroundings of the source and the time of collecting. Before an audience of physicians I may well compare judgment regarding the condition of a water with the diagnosis of disease. In the diagnosis of a fever, for instance, not only are the laboratory data taken into account—the analysis of excreta, the microscopical examination of the blood, the tests for microorganisms and their

products—but the chemical signs also—the temperature, respiration, pulse, presence and location of pain, as well as the history of the patient and in some cases that of his family. The laboratory and the clinical evidence are not to be regarded as forming two wholly different provinces or two rival paths, but as together constituting one body of evidence from which the whole picture of the disease is formed; and the more complete the evidence from all sources, the broader the basis on which to found a judgment regarding the nature of the disease and its remedy.

So when a sample of water comes into the laboratory and the chemist or bacteriologist is asked to determine whether the source from which the sample came is safe or not, he is often in the same position as the pathologist to whom is sent a prescription blank containing a blood smear and a request for a diagnosis of suspected appendicitis, answer to be sent by return mail. There are cases, of course, when a very definite answer may be given from small data, just as the finding of the bacillus of tuberculosis in a sample of sputum is sufficient for a positive diagnosis of tuberculosis. If a sample of water from a large spring, for instance, shows *Coli communis*, even in small numbers, the spring may be suspected of serious contamination without further evidence.

I can further illustrate this point, as well as make clearer the whole question of interpretations of laboratory findings, by taking up a discussion of the different kinds of interpretations which would be put on the same laboratory results obtained from waters from different sources. The presence of *Coli communis* in the water of the city of Lawrence, which is supplied by shallow wells near the Kaw, might mean a very different state of things than if detected in the supply of Newton, which comes from deep wells not near any large running stream. In the case of Lawrence, their presence in small numbers might well be explained by a small amount of surface contamination following a rain, or by the temporary impairment of the natural filter through which the river water reaches the wells. If the colon bacillus appeared in relatively large numbers, as they did last summer, for instance, the conclusion would be that the water company was pumping river water directly from the Kaw, which is known to be grossly polluted. On the other hand, if the colon bacillus were found, even in small numbers, in the city water of Newton, the conclusion would be that there is probably some way by which the water is contaminated after the first pumping, since the deep underground source could hardly be polluted; and, though the numbers found might be fewer

than those from the Lawrence sample, the source of pollution might be of much more dangerous character. The same sort of danger would be indicated by the finding of large numbers of all sorts of bacteria per cubic centimeter in water from a very deep well, especially if these numbers had increased suddenly; while the same or greater numbers might be expected in any sample of water impounded in a reservoir, or taken directly or after partial purification from any of our Kansas rivers.

Again, a water should not be regarded as safe on the basis of a single favorable test, especially if the water is taken more or less directly from a varying source like any of our western rivers. For instance, I made an analysis of the city waters of two towns on the upper Neosho last summer after a relatively dry time. Both were *Coli* negative. Early this month I examined the waters of the same towns after a light rain. Both showed *Coli communis*, though not in quantities of less than one cubic centimeter. At a high stage of the river I should expect to find still greater contamination in the waters of both these towns. With a thorough system of purification, something not possessed by either of these cities, the amount of contamination would be small at any stage of the river.

The finding of a given amount of *Coli communis* in a river water at a low stage of the stream when the water is clear is indicative of a graver source of danger than if the same amount of colon pollution were found at high water. For the presence of the colon bacillus in large numbers or a very high number of bacteria generally at low water, indicates pollution from the sewage of towns, a much more dangerous sort than that found at high water when a large portion of the contamination may be from barn-yards or manured fields. The danger from the low-water contamination is the greater, since at such a time less pains are taken to purify the water than when the river is muddy.

In the case of smaller sources of water, a more or less public well for instance, the same findings may also require different interpretations. Where the source of pollution is wholly from the surface the surroundings may be relatively innocent, or may offer continual danger of serious contamination. In water from a rather public well in Lawrence which was examined recently in the University laboratory *Coli communis* was found, though there seemed to be no cesspools or other sources of sewage in the neighborhood. But careful examination of the surroundings showed that there was drainage from the surface of a manured lawn into the well. However

undesirable this sort of contamination it is perhaps of less dangerous character than seepage from a cesspool, yet the laboratory findings might be the same in either case. A cistern water may be *Coli* positive through bird droppings or similar impurities on the roof. In another case it may be contaminated through the leakage of a drain into the cistern, even though the drain be laid in cement and the cistern lined therewith; for in the hands of the plumber, cement, like charity, covereth a multitude of sins. In the case of the roof pollution the presence of *Coli* does not necessarily indicate a dangerous state of affairs, while in the drain contamination there is continual danger of serious infection. A cistern filled with water collected in warm weather will, a few days after collection, show an enormous number of bacteria to the cubic centimeter, especially if a little organic matter went in with the warm water. Yet no danger from typhoid would be indicated by these numbers, however unwholesome the water might be; while half that number from a deep well would indicate a very probable contamination from a vault or other dangerous source.

In summary, then, we may state that a proper judgment regarding the safety of a water may be had only after complete data of all sorts have been obtained. If the purity of a private well is in question and the well is in the vicinity of an ordinary leaky vault, or if it receives drainage from the surface of the ground, it may be expected on analysis to give a positive *Coli* reaction some time after a rain if not in a dry time. In many instances of suspected wells, springs or cisterns mere inspection of the surroundings is sufficient to convince the health officer that the water is liable to sewage contamination of some sort, and it is hardly necessary to make a bacteriological analysis. In all except perhaps some very exceptional cases no hope need be entertained of finding the typhoid bacillus itself, especially in a single sample sent from some distance to the laboratory. If a city or other important supply is under consideration, thorough chemical and bacteriological tests should be supplemented by a careful survey of the surroundings of the source, including, in the case of ground-waters especially, a local geological survey. And in the case of the bacteriological analysis, at least, samples should be collected by some one skilled in this kind of work, and a series of tests should be made comparing the raw water with the tap water under all the different conditions of the source. Entirely erroneous conclusions might be founded on the result of a single examination, especially if the source is a river varying greatly at different seasons.



POTPOURRI OF LIFE.

*Gather blossoms of the laughter of Infants;
Moisten with the tears of Childhood.
Add the rose-crowned dreams of Maidens,
And the sensitiveness of Youth.
Stir with vine-wreathed rods of mystery—
While filtering—the wine of Maturity,
And blend with the spice of Experience.
Pour a measure of the oil of Sympathy,
And a cup of Sorrow
Sprinkled with some petals of Imagination.
After which, steep slowly over the fire of Ambition
Ignited by the torch of Knowledge.
After many years, scatter fragrant incense of Old Age.
Cover with a purple mantle of Charity,
And seal with the grey web of Time.*

—Anonymous.

BULLETIN

OF THE

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No. 12.

DECEMBER, 1907.

VOL. 3.

Let us be thankful as well as merry for another return of the Christ Child's Day.

The Kansas Food and Drugs Law might also be called the law of the marriage of business and morals, with cleanliness as the godfather.

"Many a man looking for sympathy really needs two swift kicks properly placed."

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Reported to the Kansas Board of Health for November, 1907.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|------------------------------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| The State...total, November, 1906 ... | 91 78 | 54 49 | 175 139 | 36 32 | 200 402 | 27 35 | 124 170 | 7 6 | 61 41 | 0 0 | 51 15 | 0 0 |
| Allen | 6 | 2 | 14 | 4 | 0 | 0 | 4 | 1 | 18 | 0 | 0 | 0 |
| Anderson | 1 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barber | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Barton | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bourbon | 1 | 1 | 0 | 0 | 1 | 1 | 6 | 0 | 0 | 0 | 0 | 0 |
| Brown | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Butler | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 21 | 0 |
| +Chase | | | | | | | | | | | | |
| Chautauqua | 1 | 0 | 3 | 0 | 7 | 1 | 3 | 1 | 0 | 0 | 0 | 0 |
| Cherokee | 4 | 4 | 0 | 0 | 12 | 2 | 3 | 0 | 0 | 0 | 0 | 0 |
| Cheyenne | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +Clark | | | | | | | | | | | | |
| Clay | 0 | 0 | 4 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cloud | | | | | | | | | | | | |
| Coffey | 0 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Comanche | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cowley | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 1 | 0 | 0 | 1 | 0 |
| Crawford | 2 | 2 | 1 | 1 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| +Decatur | | | | | | | | | | | | |
| *Dickinson | | | | | | | | | | | | |
| +Doniphan | | | | | | | | | | | | |
| Douglas | 5 | 5 | 4 | 1 | 5 | 2 | 0 | 0 | 0 | 0 | 9 | 0 |
| Edwards | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Elk | | | | | | | | | | | | |
| Ellis | 2 | 2 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 3 | 0 |
| +Ellsworth | | | | | | | | | | | | |
| +Finney | | | | | | | | | | | | |
| Ford | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Franklin | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geary | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +Grant | | | | | | | | | | | | |
| Gray | | | | | | | | | | | | |
| Greeley | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greenwood | 0 | 0 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| +Hamilton | | | | | | | | | | | | |
| Harper | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 |
| Harvey | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +Haskell | | | | | | | | | | | | |
| Hodgeman | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jefferson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Jewell | | | | | | | | | | | | |
| *Johnson | | | | | | | | | | | | |
| Kearny | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kingman | 1 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | | | | |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| Meade..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Miami..... | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montgomery..... | 2 | 0 | 7 | 2 | 7 | 1 | 16 | 0 | 0 | 0 | 0 | 0 |
| *Morris..... | | | | | | | | | | | | |
| Morton..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 0 | 0 | 1 | 1 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 |
| Neosho..... | 0 | 0 | 2 | 1 | 5 | 1 | 9 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Osage..... | | | | | | | | | | | | |
| †Osborne..... | | | | | | | | | | | | |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| †Pottawatomie..... | | | | | | | | | | | | |
| Pratt..... | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rawlins..... | 3 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Republic..... | | | | | | | | | | | | |
| Rice..... | 12 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Riley..... | 3 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Rooks..... | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Rush..... | | | | | | | | | | | | |
| Russell..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| †Scott..... | | | | | | | | | | | | |
| Sedgwick..... | 2 | 2 | 0 | 0 | 4 | 1 | 3 | 1 | 0 | 0 | 0 | 0 |
| Seward..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shawnee..... | 0 | 0 | 1 | 0 | 5 | 3 | 0 | 0 | 2 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Sherman..... | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smith..... | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stanton..... | | | | | | | | | | | | |
| Stevens..... | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sumner..... | 1 | 1 | 1 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Wabaunsee..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wallace..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Wichita..... | | | | | | | | | | | | |
| *Wilson..... | | | | | | | | | | | | |
| Woodson..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 3 | 0 | 3 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 0 | 0 | 20 | 3 | 0 | 0 | 5 | 0 | 0 | 0 |
| Coffeyville..... | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Kansas City..... | 6 | 6 | 44 | 7 | 19 | 1 | 15 | 0 | 2 | 0 | 1 | 0 |
| Leavenworth..... | 1 | 1 | 2 | 0 | 5 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Parsons..... | 7 | 5 | 5 | 1 | 0 | 0 | 2 | 0 | 14 | 0 | 6 | 0 |
| Topeka..... | 6 | 6 | 3 | 1 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| State Institutions.. | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

Remember that when you're in the right you can afford to keep your temper, and that when you're in the wrong you can't afford to lose it.

One lie breeds enough distrust to choke out the prettiest crop of confidence that a fellow ever cultivated.

DRUG ANALYSES No. VIII.

By L. E. SAYRE, PH. M., Director of Drug Analysis for the Board. (Assisted by A. Zeifler and H. Emmerson, Associate Drug Analysts.)

LAWRENCE, KAN., December 14, 1907.

In submitting this eighth report of the drug laboratory I desire to call attention to a rather important item in connection with the question of alcoholic percentage of preparations official in the U. S. P. and other standards. We have had inquiries at this office such as the following: "Can the alcoholic content of an official preparation be ascertained without analysis?" In other words, can the alcoholic content of an official preparation be computed from the character of the solvent or menstruum employed in making the preparation? It seems to us that this is a very important question and should be answered through the BULLETIN.

We wish to state, in reply to this question, that an analysis of the finished preparations is necessary in order to be accurate. The percentage of alcohol in the menstruum is a fair indication of what the finished preparation would contain, but it must be remembered that all drugs contain a certain percentage of moisture and this moisture mingles with the menstruum or solvent and is received with the percolate; hence, the alcoholic solution is diluted or reduced in alcoholic strength. It follows, therefore, that the amount of this dilution necessarily depends largely not only upon the character of the drug but upon the condition. To illustrate this we subjoin a table of the official fluid extracts, and give the character of the alcoholic menstruum employed in making the preparation. In addition to this we give the alcoholic percentage of the finished preparation. It will be seen at once, by glancing through the list, that the alcohol suffers dilution and the alcohol percentage is invariably less than is indicated by the menstruum. It should be stated that these figures are taken in the main from figures obtained by pharmaceutical chemists who manufacture these preparations on a large scale, and many have been confirmed by us. It shall be our purpose in the future to compile lists of this kind and report through the BULLETIN our findings with regard to tinctures, elixirs, and other alcoholic preparations. This is a research work that will require time that can be spared from the pressing analytical work which is coming constantly to the laboratory.

The following list is submitted, confined to the fluid extracts alone:

Alcoholic percentage of menstruum and of finished preparations.

Figures in column show alcoholic percentage of finished fluid extract.

| | | | |
|-------------------------|-----|----------------------------------------------|-----|
| Menstruum— | | Menstruum— | |
| Alcohol. | | Diluted alcohol. | |
| Fluid extract: | | Fluid extract: | |
| Aromatic..... | 85% | Berberis..... | 44% |
| Cannabis indica..... | 80 | Chimaphila..... | 38 |
| Capsicum..... | 77 | Chirata..... | 42 |
| Cimicifuga..... | 80 | Coccoloba..... | 38 |
| Cubebs..... | 72 | Conium..... | 40 |
| Gelsemium..... | 78 | Cypripedium..... | 43 |
| Sabina..... | 76 | Digitalis..... | 35 |
| Veratrum..... | 85 | Ergot..... | 42 |
| Zingiber..... | 85 | Eupatorium..... | 40 |
| Menstruum— | | Gentian..... | |
| Alcohol, 4 parts, | | Guarana..... | 40 |
| Water, 1 part. | | Krameria..... | 40 |
| Fluid extract: | | Lappa..... | 40 |
| Belladonna root..... | 65% | Phytolacca..... | 40 |
| Eriodictyon..... | 56 | Platycodon..... | 43 |
| Euonymus..... | 66 | Quillaja..... | 40 |
| Mezereum..... | 68 | Rubus..... | 38 |
| Podophyllum..... | 66 | Scutellaria..... | 42 |
| Rhubarb..... | 60 | Senna..... | 40 |
| Scopola..... | 68 | Spigelia..... | 44 |
| Serpentaria..... | 70 | Stillingia..... | 44 |
| Staphisagria..... | 68 | Taraxacum..... | 36 |
| Menstruum— | | Menstruum— | |
| Alcohol, 3 parts, | | Alcohol, 1 part, | |
| Water, 1 part. | | Water, 2 parts. | |
| Fluid extract: | | Fluid extract: | |
| Aconite..... | 65% | Quassia..... | 28% |
| Buchu..... | 62 | Sarsaparilla..... | 20 |
| Calamus..... | 64 | Menstruum— | |
| Eucalyptus..... | 55 | Containing glycerin, (with different propor- | |
| Grindelia..... | 58 | tions of alcohol and water). | |
| Ipecacuanha..... | 57 | (a) Containing 10% of glycerin, alcohol | |
| Leptandra..... | 60 | and water. | |
| Matico..... | 60 | Fluid extract: | |
| Nuxvomica..... | 60 | Apocynum..... | 48% |
| Sumbul..... | 58 | Cinchona..... | 58 |
| Valerian..... | 65 | Geranium..... | 45 |
| Xanthoxylum..... | 62 | Granatum..... | 35 |
| Menstruum— | | Hamamelis leaves..... | 22 |
| Alcohol, 7 parts, | | Hydrastis..... | 47 |
| Water, 3 parts. | | Pareira..... | 50 |
| Fluid extract: | | Quercus..... | 36 |
| Calumba..... | 60% | Rhus glabra..... | 40 |
| Menstruum— | | Rosa..... | 36 |
| Alcohol, 2 parts, | | Sarsaparilla compound..... | 34 |
| Water, 1 part. | | (b) Containing over 10% glycerin (mis- | |
| Fluid extract: | | cellaneous). | |
| Bitter orange peel..... | 51% | Fluid extract: | |
| Colchicum seed..... | 55 | Prunus virginiana..... | 18% |
| Hyoscyamus..... | 55 | Uva ursi..... | 16 |
| Senega..... | 48 | Containing acetic acid. | |
| Menstruum— | | (a) Acetic acid with dilute alcohol, 2% | |
| Alcohol, 65 parts, | | of official acid. | |
| Water, 35 parts. | | Fluid extractum: | |
| Fluid extract: | | Conium..... | 40% |
| Convallaria..... | 50% | Containing 3% solution potassium hy- | |
| Menstruum— | | droxide. | |
| Alcohol, 2 parts, | | Fluid extract: | |
| Water, 3 parts. | | Senega..... | 48% |
| Fluid extract: | | Containing 5% ammonia water. | |
| Cascara sagrada..... | 30% | Fluid extract: | |
| Menstruum— | | Glycyrrhiza..... | 18% |
| Alcohol, 5 parts, | | Triticum..... | 20 |
| Water, 8 parts. | | | |
| Fluid extract: | | | |
| Frangula..... | 30% | | |

Permit me also in the present report to submit results obtained in the laboratory examination of what is commercially known among patent medicines as "Orphans," so-called because of their unknown, neglected or defunct parentage. These "Orphans" have been coming to the laboratory in a steady stream, and it will take some time to give them the attention that they deserve. It is well to state the method we have adopted in their examination:

FIRST.—*Physical examination.* By this is meant an examination of constituents based upon physical characteristics, such as odor, taste and other physical properties.

SECOND.—*Synthetical examination.* By this is meant a building up of a preparation similar to the one under examination by the use of drugs and preparations which are found to exist in the preparation under examination, through a physical or chemical analysis.

THIRD.—*Chemical examination.* In analysis of such complex mixtures our aim has been simply to ascertain whether there are present any of the proscribed ingredients. This has been accomplished by the use of qualitative tests rather than quantitative determinations. The alcohol has been determined when necessary, and in some cases alkaloidal determinations have been made, without attempting, at this period of preliminary work, to identify the alkaloid.

In addition to this the labels and literature accompanying the preparation have been carefully examined in order to ascertain whether it comes within the range of what is legally known as misbranded.

We wish to assume that this procedure will be satisfactory for present purposes; and we wish noted in this connection that if the articles named in the present list, and those which are to follow, are found in the market in sufficient quantity to require a definite statement as to the percentage of proscribed ingredient, or a statement as to the percentage of alkaloid present, the laboratory will have to be informed of this. Until such information is received no further work need be expected upon that preparation. In other words, if it cannot be shown that there is a sufficient quantity (about one gross) of the material named, upon the market, it is the judgment of the director of the laboratory that further work embracing more detail will be unnecessary. In the event of the large quantity being found it would be necessary to communicate with the secretary of the State Board of Health, who has issued a

circular on the relation of the Board of Health to the commercial analytical work.

No. 1575. Sanibrine, 6-oz. bottle. The Sanibrine Company, Salina, Kan. "Antiseptic, preventative, deodorizer for local application." Claims to be non-poisonous. A clear, slightly yellowish liquid, sharp burning taste. Examination proves this to be a saturated aqueous solution of ethyl acetate. Misbranded, as the percentage of alcohol derivative is not stated.

No. 1568. Linseed Oil, 27-oz. bottle, filled and sealed by Board of Health officer, from Downs, Kan. On examination this proved to be a pure linseed oil.

No. 1614. Linseed Oil, from E. Courter, Downs, Kan. Sample of oil said to be identical with sample No. 1568. This latter on examination proved to be an inferior fish-oil identical with what is known as "Bank's oil," unfit for medicinal use. As this oil was said to be administered as a veterinary medicine we consider it to be illegal.

No. 1576. Pratt's Herb Tonic, Pratt's Medicine Company, Cincinnati, Ohio, and Kansas City, Mo. (12-oz. bottle). A reddish fluid, aromatic bitter taste. Contains no alcohol. Sample shows it to be a weak solution of bitter drugs, aromatized with sassafras. Contains 0.7 per cent. total solids.

No. 1577. San-jak, San-jak Medical Company, Chicago, Ill. Kidney and catarrh cure. (8-oz. bottle) Misbranded because of misleading statement on label and carton. Contains 75 per cent. of absolute alcohol by volume, and 24.7 per cent. of total solids, including sugar from syrup. Copaiba present.

No. 1578. Kanes Buchu, American Buchu Company, New York. (12-oz. bottle.) A dark, rather turbid liquid. On removing cork an evolution of gas was apparent similar to that which takes place when spirits of nitre is compounded with buchu. This article is misbranded because of statement on label, and because of its being named after one product. Contains 5.7 per cent. of alcohol by volume, and 1.7 per cent. of total solids. A weak solution of vegetable drugs, which solution is deteriorated. Unfit for sale.

No. 1579. Davies Wahoo Remedy, Davies Remedy Company, Buffalo, N. Y. A dark fluid, of an aromatic odor. (10-oz. bottle.) Misbranded, as it claims to be a positive cure for seventeen different ailments. Examination proves no alcohol to be present; 1 per cent. total solids, consisting of aloes, sassafras and other vegetable drugs.

No. 1580. Bloodene, Bloodene Medicine Company, Chicago,

Ill. Claims to be a cure for about twenty-five different diseased conditions, including diphtheria, deafness and dyspepsia. (8-oz., liquid.) Misbranded, on account of the many false and misleading statements on both carton and circular. No label on the bottle. Should show alcoholic content. Contains 54.9 per cent. absolute alcohol by volume, 1 per cent. total solids. Oil of sassafras predominant.

No. 1581. E-Ru-Sa Pile Cure, Dr. L. Griffin, Chicago, Ill., and Portland, Ore. An unctuous material in collapsible tube. (1½ oz.) Preparation is misbranded on account of the statements on circular and carton such as the "only remedy known to cure piles, a certain and permanent cure for any form of piles, ulcers, etc." On examination it is found to contain charcoal, of sulfur quite a large per cent., and lard and petrolatum.

No. 1582. Mull's Lightning Pain Cure, Lightning Medicine Company, Muscatine, Iowa. (4-oz., fluid.) Misbranded, on account of statement; cures about twenty-two different ailments. It is an alcoholic solution of volatile oils, 73.88 per cent. of absolute alcohol by volume, the oils present being principally wintergreen and peppermint.

No. 1596. Shiloh's Catarrh Remedy, S. C. Wells, Le Roy, N. Y. A powder. (½-oz. w. m. bottle.) Misbranded, because of the statement, "a positive cure for catarrh." Contains potassium chlorate, sodium chlorid, borax and magnesium carbonate; no cocaine present.

No. 1597. Ingersoll's Catarrh Cure. (Small pasteboard box.) No address on package. Claims to cure catarrh, colds, and hay fever, and hence is misbranded. Contains camphor, sodium carbonate, menthol and magnesium carbonate, 31.58 per cent.; no cocaine.

No. 1598. Dr. Cole's Catarrh Cure, Cole Medical Company, London, New York, and Chicago. (½-oz. bottle.) Misbranded, because of statement, "positive cure for all diseases of the head." Contains milk, sugar, cocaine, sodium benzoate, menthol.

No. 1599. Pretzinger's Catarrh Balm, Pretzinger's Catarrh Balm Company, Dayton, Ohio. (1-oz. glass ointment box.) Misbranded, in that it claims to be a positive cure for colds and catarrh. Contains petrolatum, camphor, menthol, salt (NaCl.) in large per cent.

No. 1569. Umatilla Indian Hogah. Manufactured at the Central Laboratory, Detroit, Mich. (8-oz. bottle.) Contains a large amount of suspended matter. Claimed to be a pure vegetable remedy. Misbranded, on account of misleading statement contained in circular and on carton. Quite a marked residue settled upon

bottom of bottle. Contains 8 per cent. of alcohol, no alkaloids, no mineral substance, 14.12 per cent. of total solids. As the alcoholic content is not stated it is therefore illegal.

No. 1570. Remick Pepsin Blood Tonic. Remick Medical Company, St. Louis, Mo. (10-oz. bottle.) Misbranded, because of the misleading statement of a positive cure for every form of skin and blood diseases. A brown-colored liquid containing quite a considerable amount of insoluble suspended matter, a portion of which adheres to the bottom and sides of bottle. Contains 12.8 per cent. of alcohol, no alkaloids, no active pepsin, a mere trace of iron, and 3.25 per cent. of total solids.

No. 1571. Lacto-Lithiated Strontium Compound. Van Ness Cooper Company, New York. (1-pint bottle.) A crimson, transparent fluid, evidently colored; contains strontium mixed with lithium. Misbranded, because of the misleading statement "that within twenty-four hours after dispensing, the albumin excreted will be diminished one-half, and in ten days it has almost entirely disappeared." There are present lactose, 8.8 per cent. of solids. The solution is decidedly acid.

No. 1572. Dennin's Certain Cure for Rheumatism. C. Dennin, Brooklyn. (7-oz. bottle.) A brown liquid containing much insoluble, suspended and deposited matter, having a decided odor of nutmeg. Misbranded, because of statement on label. Contains 18.4 per cent. of alcohol by volume, no alkaloids, 56.8 per cent. of solids, including sugar.

No. 1573. Atwood's Famous La Grippe Specific, Excelsior Medicine Company, Chicago, Ill. (8-oz. bottle.) Misbranded in the statement that it is unequaled for improving the appetite, etc., and curing dyspepsia, etc., and as it is a weak whisky (having a pronounced fusel-oil odor). There is no statement on the label of alcoholic content. Contains 31 per cent. by volume of alcohol, 1.48 per cent. of total solids.

No. 1593. A. H. Coussen's Lightning Liniment, Coussen & Tabler Medical Company, St. Louis, Mo. A creamy emulsion-like fluid, contained in a 4-oz. wide-mouth bottle. Statement is made that it cures rheumatism and thirteen other complaints, including salt-rheum and tetter. The circular around the bottle contains misleading statements, such as "most penetrating of all liniments," "gives instant relief in case of croup," "its curative properties are never failing." It has the guarantee stamp, serial number 664, pasted upon the bottle; has also the 1898 war stamp on carton. Upon examination of distillate from the preparation the presence

of oil of turpentine and acetic acid are shown. The residue left behind gives evidence of (nitrogen) protein material. We therefore conclude that this preparation is an acetic turpentine liniment similar to that of Stokes liniment, or St. John Long's liniment, composed of acetic acid, oil of turpentine, and yolk of egg.

The Score-card in Sanitary Inspection Under the Kansas Food and Drugs Law.

Beginning January 1, the department of food and drugs of the State Board of Health will put in operation a score-card in the sanitary inspection of all places where foods or drugs are manufactured, sold, or offered for sale, including groceries, drug-stores, bakeries, restaurants, hotels, dining-cars, wholesale jobbers in foods and drugs, bottling-works, and all manufacturers of food and drug products.

All places, products and things will be required to be kept in a sanitary and wholesome condition, which condition will be noted on the score-card with the proper grade, for the information of this department and all parties interested. The requirements of the law that only pure and wholesome products be manufactured will accomplish little, if such products be contaminated by unsanitary surroundings of the wholesale or retail dealer, or by dirty hands,

| SCORE CARD.—SANITATION. | |
|-----------------------------------------------------------------|-------------------------------------------------------------------------|
| GROCERY. Score, 10. Perfect, 100. | Ventilation and light..... Floor, walls, fixtures, screens, etc..... |
| | Refrigerator Butter and cheese Bulk goods, vegetables |
| | Display goods in store Sidewalk display |
| | Cellar and cellar stock Back room and yard Personnel |
| | Remarks Total |
| BAKERY. HOTEL. RESTAURANT. Score, 10. Perfect, 100. | Ventilation and light Floor, walls, fixtures, etc..... |
| | Tools, machines, etc Kitchen, dining-room, or display room |
| | Refrigerator Screens Water-supply |
| | Sewage or waste disposal Plumbing and general sanitation |
| | Personnel Remarks Total |
| MEAT MARKET. Score, 20. Perfect, 100. | Ventilation and light Floors, walls, fixtures, screens, etc..... |
| | Refrigerator Blocks, instruments, etc..... Personnel |
| | Remarks Total |
| REMARKS. | |

| SCORE CARD.—SANITATION. | |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------|
| DRUGS. Score, 10. Perfect, 100. | Light and ventilation..... Floors, walls, fixtures, etc..... |
| | Containers..... Soda-fountain, ice-cream, etc..... |
| | Back room and cellar..... Water-supply..... Sewage..... |
| | Prescription case, graduates, etc..... General sanitation |
| | Personnel..... Remarks..... Total |
| JOBBER'S. Manufacturers. Score, 20. Perfect, 100. | Light and ventilation..... Floors, walls, fixtures, etc..... |
| | Water-supply and sewage..... Raw materials and products |
| | Personnel..... Remarks..... Total |
| REMARKS. | |

clothing or tools of those required to come in contact with perishable products.

The department will also insist that the dust from the street and the fly be abolished or reduced to a minimum in all such places, and that the regulation as to sidewalk displays be observed.

This is, we believe, the first instance where the score-card has been used in food or drug inspection, and it is confidently hoped that the results will be as salutary as they have been in its use with milk inspection. Places and things that do not come up to a reasonable grade in this inspection will be held to strict account under the law.

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector.

The Score-card in City Milk Inspection.

Read before the Fourth Annual Conference of State, County and City Health Officers,
 by J. C. KENDALL, State Dairy Commissioner.

Whenever any phase of human activity is given special study and attention by any considerable number of people, sooner or later some one accustomed to and knowing the value of accuracy and system will appear and impress his personality on that industry by bringing together in a logical and carefully arranged plan the important features of the subject, so that the different factors will appear in their true light.

The various lines of agriculture have been among the last to realize the true value of system and organized effort. But within the last few years agriculture as a whole, and special sciences, among

them dairying, have received and profited to a most marked degree by the work of scientists actively engaged in developing and organizing this great industry.

A few years ago the score-card began to be used in the judging and scoring of live stock to good advantage. Through the agency of the score-card, teachers, judges and breeders of live stock have come to know and to be able to describe and express in accurate and definite terms the characteristics of the breeds, favorable and unfavorable features and characteristics of individuals in those breeds, and to estimate, to a certain extent at least, their comparative values, whether it be for the production of meat or the products of the dairy.

The use of the score-card has been extended to include a great variety of subjects other than those mentioned above, conspicuous among which is its use in judging the different kinds of feeds. Within a comparatively short time the use of the score-card by city inspectors in judging and scoring farm dairies has come into successful use. At first thought it would seem next to an impossibility to bring a subject as complex as our farm dairies within the reach of a systematic estimate or score as to their true qualifications and adaptabilities for the production of milk for the city trade.

What is meant by the dairy score-card? It is simply this: That after careful consideration of the requirements of the dairy, men engaged in this inspection work have realized that certain requirements are expected, and must be attained, by these dairies; otherwise, they should not be permitted to supply our homes with milk, which is used very largely for the food of children, makes up a large per cent. of the nourishment given to invalids, and holds its place of honor on every table.

Most attention has been paid in the past to the adulteration of milk and keeping the product up to a certain standard of quality. This is but one side of the question, and worthy of the least consideration by our health officers and inspectors. Their task is to insure the public against the spread of disease through the medium of the milk supply.

This means that the inspection must be broadened beyond the inspection of the milk after it arrives in the city, to include the health of the animals, and all phases of the work that would tend to affect in any way the purity and wholesomeness of the milk supply.

It is much better to prevent contamination than to detect its

—

presence, which is usually accomplished only after sickness, and sometimes death, has claimed its victim.

The dairy score-card is, like the score-cards used for other purposes, designed simply as a guide and a means of expressing, in a systematic way, what hitherto has been a line of work which could not be expressed in definite terms. Prof. Leonard Pearson, professor of dairy industry at Cornell University, has divided this subject of the "Production of Sanitary Milk" into five heads. To each subject he gives the value of 100 for perfection. These subjects are then divided, according to what he considers their relative importance, into a number of subheads.

| | | <i>Perfect.</i> | <i>Score.</i> |
|----------------------------------------------------|--------------------------------------------------------------------------------------|-----------------|---------------|
| 1. Health of the herd and its protection. | Health and comfort of the cows and their isolation when sick or at calving time..... | 45 | |
| | Location, lighting and ventilation of the stable..... | 35 | |
| | Food and water..... | 20 | |
| | Total..... | 100 | |
| | | | |
| 2. Cleanliness of the cows and their surroundings. | Cows..... | 30 | |
| | Stable..... | 20 | |
| | Barnyard and pasture..... | 20 | |
| | Stable air (freedom from dust and odors)..... | 30 | |
| | Total..... | 100 | |
| 3. Construction and care of the utensils. | Construction of utensils and their cleaning and sterilizing..... | 40 | |
| | Water supply for cleaning, and location and protection of its source..... | 25 | |
| | Care of utensils after cleaning..... | 20 | |
| | Use of small-top milking-pail..... | 15 | |
| | Total..... | 100 | |
| 4. Health of employees and manner of milking. | Health of employees..... | 45 | |
| | Clean overall milking suits, and milking with clean, dry hands..... | 30 | |
| | Quiet milking, attention to cleanliness of the udder, and discarding fore-milk..... | 25 | |
| | Total..... | 100 | |
| | | | |
| 5. Handling the milk. | Prompt and efficient cooling..... | 35 | |
| | Handling milk in a sanitary room and holding it at a low temperature..... | 35 | |
| | Protection during transportation to market..... | 30 | |
| | Total..... | 100 | |
| | | | |
| Total of all scores..... | | 500 | |

A low score in any one particular renders the total score low, no matter how perfect the dairy may be in other particulars. Professor Pearson grades dairies according to their relative scores, as follows:

| If the total of all scores is— | And each division is— | The sanitary conditions are— |
|--------------------------------|-----------------------|------------------------------|
| 480 or above..... | 90 or above..... | Excellent. |
| 450 or above..... | 80 or above..... | Good. |
| 400 or above..... | 60 or above..... | Medium. |
| Below 400..... | Below 60..... | Poor. |

The sanitary conditions are..... Scored by.....

The dairy division of the Bureau of Animal Industry, United States Department of Agriculture, has recently issued a detailed score-card, which treats the subject in a most complete and comprehensive way, even to the minutest detail. Each part of the equipment, as well as every method of handling the products and preventing contamination, is given its just due in as far as it seems possible to represent by means of figures.

The samples of dairy score-cards that I have referred to are of course designed to meet the needs and requirements of the inspector in scoring the most up-to-date plants in the country. And while they might not be adapted for use in our cities in Kansas at the present time, they would serve as a most valuable guide, and, with proper modifications, could be used with excellent results.

The use of the dairy score-card in any locality has a tendency to improve dairy conditions to a marked degree. It is an incentive for the dairyman to do better work, and it is inclined to give credit where credit belongs, but the interest does not stop here. The inspector, if he be the right kind of man for the work, is an educator, and the farm becomes greatly benefited through his frequent visits of inspection.

It is customary when contemplating the use of the score-card to first visit the dairies supplying the city with milk, in order that a true knowledge of the existing conditions be known. The dairies are scored, the points wherein the dairy is lacking are pointed out and emphasized to the owner, and they are given a reasonable time in which to make such changes as may seem necessary. Then the dairies are scored again, and it is customary to make these scores known, since publicity in such matters has a wonderful influence in bringing these dairies to a higher standard of perfection.

That the dairy score-card is a strong and potent factor in improving the sanitary conditions of our milk supply, when properly handled, does not permit of argument, but it must be handled with great care. The inspector must be a man of rare judgment and have a practical working knowledge of the dairy business. Entirely too many of our inspectors and health boards do not know the farmer's side of this question, and through their requirements, many times unreasonable, do more harm than the good they are able to accomplish.

It is folly to require or expect the dairymen in the newer dairy sections of the country, where little attention has been paid to this phase of the work, to attain at once the high standards that could be expected in the older dairy sections. But every town and city that is dependent for its milk supply on farm dairies should give this subject attention and take such steps as will eventually insure

the public a wholesome, healthy milk supply, and no agency would do more towards attaining this end, if properly made use of, than the dairy score-card.

It is not the dairyman alone who needs to be educated in the handling and care of milk, its true value, and the dangers from using milk that has been produced under unsanitary conditions. The consuming public is even more ignorant of such matters than we would expect. The price of the product appeals much more strongly to the consumer than that it be handled according to approved methods. A certain percent of fat to them is a truer guide to the value of milk than its bacterial content. In many places it is necessary to create a public sentiment and bring the true facts of the case to the attention of the public before they are willing to cooperate and insist on receiving a supply of milk that shall be reasonably free from danger.

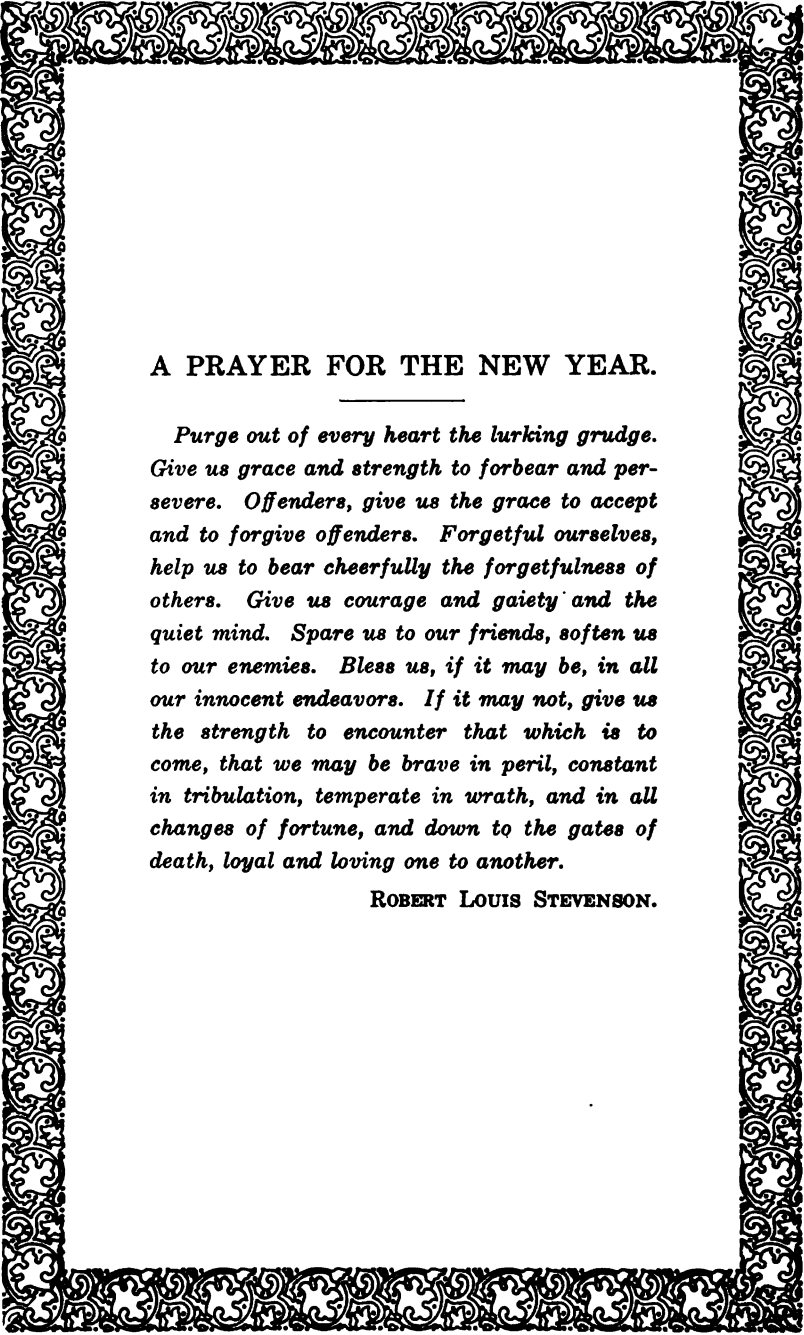
Many of our dairymen recognize the fact that they are not handling their milk as they should, but considering the low price at which they have to sell their products, the high price of feed, and the scarcity of labor, if they are required to increase the expense of production materially they will be driven out of business.

So taken all in all this question is a complex one, and should receive a great deal of serious thought and attention by our health officers and inspectors. A few simple rules and regulations controlling the essential points of the work, and these enforced, will to our mind be much more satisfactory and fruitful of results than the long complete lists of requirements placed on the books of so many of our cities, often only to be forgotten.

Much good can be accomplished by calling the milk producers of any city together and talking the matter over, and showing them the necessity for such rules and regulations.

This sometimes has been tried with good results: Before dairy men are permitted to sell milk they are required to appear and pledge themselves to live up to certain requirements of the law. If one of the leading dairymen supplying any city with milk can be induced to use better methods in handling his milk, clean up his premises, and have his herd tested for tuberculosis, the other dairymen in that locality, if they expect to compete with him, will be driven to come up to his standards. Thus we have brought about some valuable improvements without any friction, and by a much more easy and satisfactory route than by compelling them to do these things.

Through the education of the public and the dairymen, the use of the score-card, the advice and assistance of the inspector, city, county, state and other health officers, and the enactment and enforcement of reasonable municipal laws, must we look for the purity of our milk supply and the protection and health of our families



A PRAYER FOR THE NEW YEAR.

Purge out of every heart the lurking grudge. Give us grace and strength to forbear and persevere. Offenders, give us the grace to accept and to forgive offenders. Forgetful ourselves, help us to bear cheerfully the forgetfulness of others. Give us courage and gaiety and the quiet mind. Spare us to our friends, soften us to our enemies. Bless us, if it may be, in all our innocent endeavors. If it may not, give us the strength to encounter that which is to come, that we may be brave in peril, constant in tribulation, temperate in wrath, and in all changes of fortune, and down to the gates of death, loyal and loving one to another.

ROBERT LOUIS STEVENSON.

BULLETIN

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No. 1.

JANUARY, 1908.

VOL. IV.

AN OYSTER PROBLEM: Kansas consumes approximately 180,000 gallons of oysters annually. Formerly they contained from fifteen to twenty per cent. of added water. Thus this department will save to the consumers \$54,000 annually on this one item, based on a fifteen per cent. water content, at the usual price of fifty cents per quart. The cost to the state for the department of food and drugs is \$12,000 per year. Draw your own conclusions.

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VITAL STATISTICS

Reported to the Kansas Board of Health for December, 1907.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|------------------------------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| The State...total, December, 1906.... | 91 96 | 58 59 | 111 102 | 81 23 | 158 280 | 21 38 | 108 111 | 5 9 | 206 48 | 1 0 | 48 28 | 0 2 |
| Allen | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| • Anderson | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 37 | 0 | 0 | 0 |
| Atchison | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Barber | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 6 | 0 | 0 | 0 |
| Barton | 3 | 3 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bourbon | 1 | 1 | 0 | 0 | 2 | 0 | 6 | 0 | 3 | 0 | 0 | 0 |
| † Brown | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 1 | 0 |
| Butler | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| • Chautauqua | 2 | 2 | 1 | 1 | 4 | 1 | 6 | 0 | 1 | 0 | 0 | 0 |
| Cherokee | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • Cheyenne | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| † Clark | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| † Clay | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cloud | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Coffey | 1 | 1 | 1 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Comanche | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cowley | 8 | 3 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crawford | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Decatur | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 |
| Dickinson | 15 | 6 | 10 | 4 | 15 | 1 | 4 | 0 | 0 | 0 | 7 | 0 |
| • Doniphan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • Douglas | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Edwards | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| • Elk | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Ellis | 1 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 1 | 0 | 0 | 0 |
| † Ellsworth | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Finney | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 0 |
| Franklin | 2 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Geary | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Graham | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Grant | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| † Gray | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Greeley | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Greenwood | 0 | 0 | 0 | 0 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| † Hamilton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • Harper | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Harvey | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| † Haskell | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| † Hodgeman | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Jackson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jefferson | 2 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| • Jewell | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • Johnson | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • Kearny | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| † Kingman | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • Kiowa | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Labette | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| † Lane | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Leavenworth | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 0 | 0 | 0 | 0 | 0 |
| Linn | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| † Logan | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • Lyon | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marion | 3 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marshall | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| • McPherson | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| †Meade..... | | | | | | | | | | | | |
| *Miami..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Mitchell..... | 2 | 2 | 13 | 2 | 10 | 2 | 10 | 0 | 0 | 0 | 0 | 0 |
| Montgomery..... | | | | | | | | | | | | |
| *Morris..... | | | | | | | | | | | | |
| †Morton..... | | | | | | | | | | | | |
| Nemaha..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Neosho..... | 0 | 0 | 3 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 |
| *Ness..... | | | | | | | | | | | | |
| Norton..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Osborne..... | | | | | | | | | | | | |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips..... | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie..... | 2 | 2 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 3 | 1 | 6 | 0 | 1 | 0 | 0 | 0 | 11 | 0 | 0 | 0 |
| *Rawlins..... | | | | | | | | | | | | |
| Reno..... | 0 | 0 | 0 | 0 | 4 | 1 | 2 | 1 | 60 | 1 | 0 | 0 |
| Republic..... | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 13 | 0 | 0 | 0 |
| *Rice..... | | | | | | | | | | | | |
| *Riley..... | | | | | | | | | | | | |
| Rooks..... | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 20 | 0 |
| Russell..... | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Scott..... | | | | | | | | | | | | |
| †Sedgwick..... | | | | | | | | | | | | |
| †Seward..... | | | | | | | | | | | | |
| Shawnee..... | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 15 | 0 | 0 | 0 |
| Sheridan..... | | | | | | | | | | | | |
| Sherman..... | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| *Smith..... | | | | | | | | | | | | |
| Stafford..... | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 6 | 0 | 0 | 0 |
| †Stanton..... | | | | | | | | | | | | |
| †Stevens..... | | | | | | | | | | | | |
| Sumner..... | 4 | 4 | 2 | 0 | 12 | 3 | 1 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego..... | 0 | 0 | 2 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| Wabaunsee..... | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wallace..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Wichita..... | | | | | | | | | | | | |
| *Wilson..... | | | | | | | | | | | | |
| Woodson..... | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 4 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | | | | | | | | | | | | |
| Coffeyville..... | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City..... | 19 | 6 | 25 | 4 | 15 | 1 | 11 | 0 | 4 | 0 | 3 | 0 |
| Leavenworth..... | 2 | 2 | 4 | 1 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Parsons..... | 3 | 3 | 4 | 0 | 1 | 0 | 1 | 0 | 11 | 0 | 2 | 0 |
| Topeka..... | 1 | 1 | 0 | 0 | 11 | 2 | 7 | 0 | 2 | 0 | 1 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| †State Institutions. | | | | | | | | | | | | |

*No report.

†No contagious diseases in county.

‡No health officer.

A NEW YEAR'S RESOLUTION: I'll keep sweet.

Have you seen the Kansas oyster in its new dress?

FOOD ANALYSES No. XII.

By J. T. WILLARD, Food Analyst for the Board.

MANHATTAN, KAN., December 19, 1907.

The following reports are upon samples submitted by food inspectors of the State Board of Health:

No. 5020. Hamburg steak, from J. F. Rauscher, Emporia, Kan. Tests showed the sample to be free from borax, boric acid, formaldehyde, sulfites, salicylic acid, and benzoates. Passed.

No. 7019. Hamburg steak, from Garland Knowles, Wellington, Kan. Tested in the same manner as No. 5020. Sulfites were found present in small amount. Illegal.

No. 7026. Hamburg steak, from Roy Potts, Stafford, Kan. Tested in same manner as No. 5020 and no preservatives found. Passed.

No. 6010. Hamburg steak, from F. Kaufman, Kansas City, Kan. Tested as No. 5020 and no preservatives found. Passed.

No. 6011. Hamburg steak, from J. West, Kansas City, Kan. Tested in same manner as No. 5020. Apparently contained a trace of sulfites. Passed.

No. 6012. Hamburg steak, from P. B. Dietz, Kansas City, Kan. Tested for preservatives in the same manner as No. 5020, and sulfites were found present in notable quantities. Illegal.

No. 7035. Hamburg steak, from Pullins & Thompson, Council Grove, Kan. Tested for preservatives as in other cases and none found. Passed.

No. 5026. Vanilla ice-cream, from Crispis Hutchinson Candy Company, Hutchinson, Kan. Contained 10 per cent. of butter-fat and a small percentage of gelatin, but was free from preservatives. Illegal because of deficient fat.

No. 7025. Fig cakes, from White-Osbun Mercantile Company, Fort Scott, Kan. The fig filling was tested for preservatives and was found to contain none. Passed.

No. 7026. Date cakes, from White-Osbun Mercantile Company, Fort Scott, Kan. Filling tested for preservatives and none found. Passed.

No. 5135. Sample of milk, taken on dining-car between Topeka and Emporia, train No. 3, A. T. & S. F. railroad; 3.35 per cent. of fat. Formaldehyde absent. Test for borates not positive, though a very small amount seemed to be indicated. Passed.

No. 5136. Milk, from Santa Fe eating-house, Emporia, Kan.; 2.25 per cent. of fat. Formaldehyde absent. Test for borates as in No. 5135. Illegal. Deficient in fat.

No. 6013. Milk, from dining-car No. 309, between Topeka and Ellis. Fat, 3.77 per cent.; total solids, 12.5 per cent. Formaldehyde absent. Test for borates gave results as in No. 5135. Passed.

OYSTERS.

The investigation concerning the amount of water proper to be sold with oysters, which was begun last spring, was temporarily discontinued because of the closing of the oyster season. This fall the matter was again taken up. The writer took advantage of an eastern trip to secure a number of samples of oysters direct from the shells. These were obtained in a Washington market. The oysters were by the shucker placed directly in the jars in which they were shipped to the laboratory. The wish was to obtain them in the same condition as they would be delivered to a local purchaser. Some of the liquor in the shells with the oysters was put in the jar with them, but there is no means of knowing how exactly the division corresponded with ordinary practice. Six samples were obtained, and considerable differences were observed in the apparent amounts of liquid included. As the oysters were bought by count it was no object to the shucker to depart from his ordinary custom in respect to the amount of liquor included. At a later date other samples were secured for us in a similar manner by Mr. F. C. Weber, of the Bureau of Chemistry, to whom we are much indebted for his courteous assistance.

The samples were placed in pint-size self-sealing fruit-jars, a small amount of boric acid added as a preservative, and then securely closed and shipped by express to the laboratory at Manhattan. The analytical results obtained are shown in the accompanying table. Two bulk samples were sent by Mr. Weber as an indication of the quality of the oysters sold in that form in that market, and the results upon four additional bulk samples purchased in Manhattan are exhibited.

It will be remembered that samples of oysters examined by Prof. E. H. S. Bailey and by myself last spring were found to contain copper and that the possibility that the metal is a normal constituent of oysters was suggested by the writer. Tests of ten samples, from various localities, disclosed the presence of copper in all cases. Possession of authentic samples direct from the shells afforded an opportunity to continue investigation of this question at the same time that the water content was being studied.

TABLE SHOWING WATER, SOLIDS AND COPPER IN OYSTERS.

| No. | Place. | NAME. | Number of oysters.... | Gross weight of sample. Grams.... | Weight of meat. Grams..... | Weight of liquid. Grams..... | Per cent. water in liquid..... | Per cent. solids in liquid..... | Per cent. water in meat..... | Per cent. solids in meat..... | Per cent. copper in liquid..... | Per cent. copper in meat..... | Per cent. copper in sample..... | Per cent. copper in dry sample..... |
|--------|------------------|------------------------------------|-----------------------|-----------------------------------|----------------------------|------------------------------|--------------------------------|---------------------------------|------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------------|
| 12,094 | Manhattan. | Bulk, "Booth's" | + Pin. | 422 | 253 | 170 | 37.60 | 2.40 | 37.90 | 12.10 | 81.9 | 0.0072 | 0.0072 | 0.087 |
| 12,095 | " | " | " | 460 | 280 | 190 | 36.20 | 3.90 | 37.60 | 12.40 | 90.97 | 0.0072 | 0.0072 | 0.079 |
| 12,096 | " | " | 60 | 372 | 225 | 72 | 33.75 | 2.25 | 39.49 | 10.51 | 91.09 | 0.0071 | 0.0071 | 0.079 |
| 12,097 | Washington, D.C. | " | 60 | 540 | 470 | 70 | 37.51 | 2.49 | 38.32 | 11.08 | 91.62 | 0.0062 | 0.0062 | 0.069 |
| 12,098 | " | Bulk, No. I. | 22 | 375 | 190 | 185 | 33.88 | 5.64 | 36.62 | 13.50 | 90.14 | 0.0054 | 0.0054 | 0.085 |
| 12,100 | " | Bulk, No. II. | 48 | 400 | 185 | 215 | 34.36 | 5.64 | 36.62 | 13.50 | 90.14 | 0.0054 | 0.0054 | 0.085 |
| 12,101 | " | Curryman. | 14 | 280 | 140 | 140 | 34.68 | 6.32 | 36.56 | 13.44 | 90.62 | 0.0056 | 0.0056 | 0.065 |
| 12,102 | " | Rockaway. | 11 | 240 | 143 | 92 | 30.65 | 9.35 | 35.48 | 14.52 | 87.46 | 0.0060 | 0.0060 | 0.048 |
| 12,103 | " | York River | 10 | 185 | 107 | 78 | 31.12 | 8.88 | 35.66 | 14.84 | 87.96 | 0.0064 | 0.0064 | 0.084 |
| 12,104 | " | Hampton Bars | 14 | 225 | 105 | 120 | 31.82 | 8.18 | 36.88 | 13.12 | 89.03 | 0.0056 | 0.0056 | 0.068 |
| 12,105 | " | Cape Cod. | 13 | 225 | 120 | 105 | 33.75 | 11.25 | 32.82 | 17.08 | 86.64 | 0.0048 | 0.0048 | 0.040 |
| 12,106 | " | Blue Points. | 24 | 180 | 90 | 90 | 33.45 | 11.55 | 32.82 | 17.18 | 86.64 | 0.0041 | 0.0041 | 0.029 |
| 12,107 | " | Coan River. | 12 | 240 | 170 | 70 | 34.20 | 5.18 | 33.94 | 16.06 | 86.98 | 0.0068 | 0.0068 | 0.044 |
| 12,108 | " | Blue Point. | 12 | 170 | 130 | 40 | 36.41 | 4.59 | 34.53 | 16.47 | 87.16 | 0.0044 | 0.0044 | 0.084 |
| 12,109 | " | Lynnhaven Bay | 12 | 820 | 240 | 580 | 31.80 | 8.20 | 31.94 | 18.66 | 83.96 | 0.0104 | 0.0104 | 0.064 |
| 12,110 | " | Rockaways. | 12 | 270 | 200 | 70 | 34.72 | 6.28 | 33.96 | 16.04 | 86.75 | 0.0080 | 0.0080 | 0.060 |
| 12,111 | Philadelphia. | Clarke River. | 12 | 260 | 190 | 70 | 33.69 | 6.31 | 33.13 | 16.87 | 85.96 | 0.0062 | 0.0062 | 0.062 |
| 12,112 | " | Tucker Salts, Barnegat Bay | 12 | 205 | 155 | 50 | 34.88 | 6.12 | 32.36 | 17.65 | 86.41 | 0.0062 | 0.0062 | 0.018 |
| 12,113 | " | Rockaway, partial salts. | 12 | 190 | 100 | 90 | 32.72 | 7.28 | 31.62 | 18.38 | 82.21 | 0.0062 | 0.0062 | 0.018 |
| 12,114 | " | Chitauque Salts, Jersey coast. | 12 | 150 | 100 | 50 | 32.22 | 7.78 | 32.19 | 17.81 | 86.94 | 0.0068 | 0.0068 | 0.018 |
| 12,115 | " | Maurice River Cove, Baltimore Bay. | 12 | 270 | 170 | 100 | 33.20 | 6.80 | 33.56 | 16.35 | 87.19 | 0.0068 | 0.0068 | 0.018 |
| 12,116 | " | Cedar Rock Salts, Jersey coast. | 12 | 140 | 105 | 35 | 33.40 | 6.60 | 32.96 | 16.44 | 86.77 | 0.0018 | 0.0018 | 0.018 |
| 12,117 | New York. | Maurice River Cove, transplanted. | 12 | 200 | 145 | 55 | 32.40 | 7.60 | 32.96 | 17.44 | 85.27 | 0.0048 | 0.0048 | 0.082 |
| 12,118 | " | Cape Cod., Va. | 12 | 210 | 165 | 45 | 33.99 | 6.21 | 33.50 | 17.60 | 85.33 | 0.0032 | 0.0032 | 0.021 |
| 12,119 | " | Lynnhaven. | 12 | 170 | 135 | 35 | 34.96 | 5.02 | 30.92 | 19.08 | 83.81 | 0.006 | 0.006 | 0.016 |
| 12,120 | " | Rockaways, Long Island. | 24 | 465 | 185 | 280 | 36.53 | 4.47 | 35.03 | 14.42 | 83.94 | 0.0062 | 0.0062 | 0.047 |
| 12,121 | " | Blue Points, Long Island. | 22 | 230 | 200 | 30 | 33.79 | 6.21 | 34.47 | 15.03 | 87.11 | 0.0082 | 0.0082 | 0.071 |
| 12,122 | Baltimore. | Sea Puffs. | 12 | 220 | 170 | 50 | 33.79 | 6.21 | 33.89 | 16.11 | 85.82 | 0.0072 | 0.0072 | 0.061 |
| 12,123 | " | Easton Bay, Md. | 12 | 410 | 260 | 150 | 34.69 | 5.31 | 33.54 | 10.46 | 91.39 | 0.0076 | 0.0076 | 0.067 |
| 12,124 | " | Lynnhaven. | 12 | 380 | 275 | 105 | 33.77 | 5.21 | 32.03 | 17.97 | 82.88 | 0.0104 | 0.0104 | 0.170 |
| 12,125 | " | Shesler River. | 12 | 215 | 130 | 85 | 34.19 | 5.19 | 32.08 | 17.97 | 82.88 | 0.0064 | 0.0064 | 0.110 |
| 12,126 | " | Worm Harbor. | 12 | 300 | 115 | 185 | 36.51 | 3.19 | 36.09 | 13.91 | 89.08 | 0.0028 | 0.0028 | 0.026 |
| 12,127 | " | West River, Md. | 12 | 275 | 180 | 95 | 33.12 | 3.28 | 33.93 | 10.57 | 90.94 | 0.0048 | 0.0048 | 0.068 |
| 12,128 | " | Swamp Point. | 14 | 260 | 195 | 65 | 35.12 | 1.82 | 30.57 | 9.43 | 92.59 | 0.0028 | 0.0028 | 0.068 |

Through the courtesy of Mr. Will H. Bailey, six samples were secured from the Philadelphia market. They were taken directly from the shell, preserved by boric acid, and shipped as were the Washington samples.

The New York market was also sampled, and for this we are indebted to Mr. L. D. Havenhill, whose letter concerning them contains the following interesting paragraph:

"I have forwarded to you to-day by American express one package of glass, collect, which I trust will reach you safely and in good time. I was able to secure for you five staple samples of oysters, as per enclosed statement. I understand that all oysters are floated one or more 'tides' before they are brought to market. I could get no information concerning the length of time which these samples were floated. They are, however, such as are regularly supplied in the markets here. The Rockaways and the Blue Points were delivered to the market fresh this morning, and I see no reason why they should not contain the maximum amount of water. The other samples were, I was told, delivered Monday morning. They were all taken from the shells in my presence, and I believe they are representative."

Baltimore is so prominent as a shipping-point for oysters that samples from that city seemed especially desirable. Through Mr. L. A. Fitz, of the Department of Agriculture, arrangements were made to secure these, but as his duties caused his removal from Baltimore he arranged with one of his associates, Mr. Clarence A. Neal, to obtain the samples. Mr. Neal's very interesting letter follows almost in full, and we are under especial obligations to him for his intelligent interest and his courteous service:

"Your letter of October 31 received and carefully noted. I have followed your instructions as nearly as practicable, and shipped to you yesterday a box containing six samples of oysters, *via* Adams Express. You will find the samples marked as follows: Chester River, Md.; West River, Md.; Swamp Point, Md.; Easton Bay, Md.; 'Horn Harbor' brand, and 'Lynn Haven' brand. The first four samples mentioned I obtained yesterday morning from oyster-boats lying in the harbor. After purchasing the oysters in the shell from the owner of the boat, I had them shucked in my presence and thrown into the jar. The labels on these jars show the points from which the oysters were obtained. The two last samples mentioned are brands which are sold over what is known as 'Raw Bar' in our best city restaurants. Each of these samples I obtained in a different restaurant, in the shell, and had them

shucked and the oysters thrown into the jars in my presence, likewise. These samples were brought to this laboratory and washed. That is, the original liquor of the oysters was drained off, and each sample, practically dry, was put in its jar, in which had been put about three-fourths of a gill of fresh water; to each sample was added the boric acid, as instructed, the jar sealed and carefully packed under my supervision, and the box carried immediately to the express company's office. My reason for washing the oysters, as described, will be explained later.

"In order to get the best results for you in this matter I thought best to make some investigation among oyster packers. I find, among other points given me, that it would be impossible to ascertain how many beds are represented in the Baltimore market, for the reason that oyster-beds are very numerous. I am told that from a single river oysters obtained from a bed on one side of the river may be quite different in point of size and quality from oysters obtained on the other side of the river. Moreover, oysters taken from a bed one year may be fat and large, and the next year oysters taken from the same bed will very likely run poor and small, so that there is no regular rule governing. The various samples which I sent you, marked various country points, represent fairly well the oysters which are received from those regions, and which are sold on this market. The two fancy brands may give you an idea of what the select oysters are. I am told that these brands mean little except a careful selection. That is, take the 'Lynn Haven' brand for example, which is a large oyster; the same is obtained by selecting from common stock oysters which run large in size and have a good taste, so that the name of the brand means little and demands a higher price only on account of careful selection.

"The method used in packing-houses I find to be somewhat as follows: When the oyster is first shucked, without any of its own liquor it is thrown into a receptacle containing fresh water. In a short time this water is drained off and the oysters are thrown into a large tub containing fresh water, where they are allowed to remain for an hour or two. The water is then drained off by throwing the contents of the tub into a large trough with holes in the bottom, and the oysters, practically dry, are then measured up for sale. In shipping to distant points pails are used containing from five to ten gallons, and if a merchant would ship five gallons of oysters he would use a pail containing about eight gallons. Into the empty pail he first throws about a quart of water and then

pours in the five gallons of oysters, after which a lump of ice (which, melted, would make about two gallons of water) is placed in the pail, and the top nailed on. In this way your Western shipper would receive a pail (the ice having melted) containing about seven and one-half gallons of oysters and water, but he would be paying for only five gallons of oysters, because, as I mentioned before, they were originally measured practically dry by the Eastern shipper. I am told, too, that the oysters are sold on this market in about the same manner; that is, the wholesale dealer measures without including the water. In some of the retail shops the custom is to use a dipper with holes in it, so that in measuring up for the customer the water drains off and the customer gets almost dry measure. This, however, is not governed by any law, and it is left with the dealer how he shall measure out his oysters, many profiting by including a supply of water. The reason given for keeping oysters in fresh water is that in their own liquor they would soon spoil, while without any water they become sticky and slimy, and would be repulsive to the purchaser.

"The samples which I sent you have, therefore, been treated in just about the same manner as the dealer here would handle a large quantity, but in the light of the explanation made to you, these samples will not be worth so much to you as you anticipate. From my understanding of the conditions governing sale of oysters, your Western dealer should measure his oysters as nearly dry as practicable, for the reason that he buys them measured in that manner. One of the dealers told me that last spring he visited a customer living in Iowa, and went out with him on one of his route wagons. He found that his customer was measuring out the oysters with as much water as was received in the pail. In other words he was paying for five gallons and selling about seven and one-half gallons."

In the analysis of the oysters the solids in the meats and in the liquor were separately determined, and from the percentages in each and the amounts of meats and liquor the solids in the whole sample were calculated.

In the determination of copper the meats and liquor were separately treated in a number of cases, but in most of the later analyses a sample was taken designed to represent the whole. The analysis was made by digesting fifty grams of the sample with concentrated sulfuric acid as for the determination of nitrogen by the Kjeldahl method, care being taken not to use a large excess of acid beyond that necessary for oxidation of the organic matter. The copper was precipitated electrolytically in the clear and diluted solution. No

trouble was experienced by this method except some foaming at the beginning of the digestion, but this was readily controlled by adding a little paraffin.

Study of the table shows wide diversity in the solids present in the samples. Reference to the quotations from letters shows that there is probably much lack of uniformity of treatment of the oysters before they reach the seaboard markets. Some are "floated" and others are not, hence samples from the shell may not represent what the oysters should be. The Baltimore samples, it must be remembered, had a little water added to them in order to simulate trade practice. It would also seem almost certain that the "Chester River" and the "Swamp Point," and perhaps others, had been "floated."

From the information at hand it would seem that fresh oysters as placed on the market should have very little liquid with them, and the percentage of the solids in the meats should be the best test of adulteration. It is well known that oysters will absorb by osmotic action a portion of any water in which they may be placed. At the same time oyster solids pass out to a certain extent into the surrounding water. There is no doubt that in this way not only are the juices of the oyster diluted by the water absorbed, but the flavor is still further impaired by the loss of solids. There is a marked difference in flavor between oysters in a natural state and those in the water-soaked, adulterated condition which has been the rule up to recent time.

As to the proper amount of water for oysters, it is probable that no fixed rule applies, the natural product probably varying considerably even before it has been subjected to the manipulations of man. Of the twenty-two samples taken directly from the shells and to which no water was added, save a part of such as accompanied the oysters in the shells, it will be seen that in the meats the solids found varied from 13.12 per cent. in the Hampton Bars to 19.08 per cent. in one of the Lynn Haven samples. The average of the twenty-two samples is 16.3 per cent. If we consider the solids in the entire samples, that is meats and liquor together, using the same examples we find the minimum amount in the Currymans with 9.38 per cent., and the maximum in the Rockaways with 17.79 per cent. In the Currymans, however, it will be observed that there was an unusually large amount of accompanying liquor, while in the Rockaways there was very little. The average amount of solids in the liquor of the twenty-two samples was 6.97 per cent.

Taking everything into consideration the standard of ten per

cent. of solids established by the State Board of Health seems abundantly low. Further, it should be recognized that the addition of water to oysters, with percentages of solids large enough to stand dilution, must be treated as an adulteration. The standard is not to be looked upon as one of excellence, but the minimum that will be tolerated. The average should be much higher; that shown by the samples under consideration is 13.58 per cent.

It is perhaps also worth while to further emphasize the fact that merely keeping the oysters in water adulterates them by extracting their solids and filling the meats with water, even if the dealer strains them out from the remaining water when he measures them to the consumer, and such treatment of oysters is contrary to both federal and Kansas laws.

Recurring now to the question of copper in oysters, it will be seen from the table that all the samples contained copper in quantity sufficient for its determination, and that the amounts varied greatly. None of these show as high a percentage as that found in one reported upon last June, viz., 0.21 per cent. of the dry substance of the meat. In the thirty-four samples included in the present report the minimum amount of copper found, calculated on the dry solids, was 0.005 per cent., the maximum was 0.17 per cent., and the average 0.05 per cent. It is also interesting to note that both the maximum and the minimum were found in "Lynn Haven" oysters, but it must also not be forgotten that owing to the uncertainty of dealers we may not be sure that oysters called "Lynn Haven" really are from that locality.

It may be recalled that in a previous report it was recorded that copper had been found in each of ten other samples, including a number from Southern localities. These samples, being canned, were perhaps open to the suspicion that the copper had been introduced in some way in the process. From the data now at hand, however, it seems safe to conclude that copper is a normal constituent of the oyster. It seems not unlikely that samples carrying the larger quantities may be deleterious, at least to individuals especially susceptible to the toxic effect of the metal. As previously noted, the oysters rich in copper have a coppery taste and a greenish-blue color. A green color in oysters has been observed to be caused by algæ upon which the oysters had fed.

Writers state that the oysters of the European Atlantic, which are a different species from that of this side of the ocean, have a marked coppery taste, and are thus less agreeable as food. It would be in-

teresting to ascertain if that species is richer in copper than our own, or whether the taste is due to some other cause.

Attention may be called to the fact that the liquor accompanying the oysters has, whenever examined, been found to contain copper in quantities of the same order of magnitude as those found in the meats.

We have done no work upon the nature of the copper compound. The name hemocyanin has been given to a respiratory pigment containing copper and occurring in many mollusks and crustaceans, and probably the copper of oysters is in the same or a similar compound.

Acknowledgment should be made to Mr. C. A. A. Utt for the work upon the recent samples of oysters, and he has also made most of the other analyses reported at this time. I am indebted to Mr. J. W. Calvin for the earlier determinations of copper.

Compound Kargon.

We quote the following from the *Journal of the American Medical Association* :

"From the reports of our chemists who analyzed this nostrum, it appears to contain potassium acetate and buchu as the essential constituents. One chemist concludes his report as follows: 'This wonderful remedy, then, seems to be acetate of potash, about fifteen grains to each teaspoonful, and fluid extract of buchu.' Another chemist states: 'Kargon contains buchu, potassium acetate, glycerol and eighteen per cent. alcohol.' . . . Of course a combination of acetate of potash and fluid extract of buchu with fluid extract of dandelion and compound syrup of sarsaparilla makes an active diuretic. But it is a combination that in the majority of cases of kidney disease will do great harm. And no matter what the conditions, if used indiscriminately and 'taken regularly,' as the advertisements advocate, it cannot be otherwise than dangerous."

Heredity.

Out from the tomb crept vice with hideous leer;
"I am Heredity," he said, "whom all men fear.
I sleep, but die not; when fate calls I come,
And generations at my touch succumb."
A lofty shape rose sudden in his path;
It cried, "You lie!" and struck at him in wrath.
Heredity, the braggart, stark and still,
Fell prostrate at the feet of mighty Will.

— Ella Wheeler Wilcox.

DRUG ANALYSES No. IX.

By L. E. SAYRE, PH. M., Director of Drug Analyses for the Board (Assisted by A. ZIEFLE and H. W. EMBERSON, Associate Drug Analysts, and C. M. STERLING, Microscopist.)

LAWRENCE, KAN., January 10, 1908.

The following communication from the drug laboratory includes a report upon some patent medicines, many items of which consist of "Orphans," which are so called because of their unknown, neglected or defunct parentage. In our previous report, pages 228 to 234 of December issue, will be found a statement as to the method we have adopted in the examination of these preparations. There are a few of them that must be reserved for further investigation, which shall consist of a more exact qualitative and, possibly, quantitative analysis, in order to determine whether they contain any of the proscribed narcotics or habit-producing drugs. The few referred to are preparations put upon the market for the relief of nervous conditions—nervous sedatives, etc.

Added to the report on patent medicines will be found one on some spices that have come to the laboratory from various sources, on which your board have requested an estimation, based upon the Kansas standards.

No. 1607. Rathbun's Indian Remedy, "for summer complaint in children, cholera morbus, cholera infantum, and bloody flux." F. H. Rathbun, 1340 Ohio street, Lawrence, Kan. This preparation gave a dark, thin, scaly residue of 1.536 per cent. It has peppermint-like odor, and probably dependent upon such aromatics for its preservation. Unfortunately, however, the preparation soon deteriorates. In the bottle there is a considerable amount of sediment and fungus growth (*A. penicillium*), and, under the microscope, it can be seen that the liquid is teeming with bacteria of all sorts, spherical forms, rods, etc. Illegal.

No. 1608. Rathbun's Famous Vegetable Vermifuge. "For man and beast, cure for night sweats; gives instant relief in case of worms and bots." F. H. Rathbun, Lawrence, Kan. A preparation containing no alcohol, and apparently decomposed, because of the large amount of slimy sediment deposited. On evaporation this preparation gave a saccharin, colored deposit, having a hoarhound-like taste. The saccharin residue was 14.82 per cent. As this vermifuge preparation is recommended for night sweats in dose of two teaspoonfuls on going to bed, it would seem that an

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explanation was called for, as vermifuges are not usually employed for that purpose.

No. 1609. Rathbun's Complexion Lotion. "Removes pimples, blackheads, crowfeet, wrinkles, salt-rheum or eczema, and all eruptions, etc." F. H. Rathbun, Lawrence, Kan. Misbranded, on account of statements on label. A poorly compounded preparation, inasmuch as there are minute oleaginous globules floating on the surface. The preparation has the odor of rose-water. It contains 19.25 per cent. of residue, which consists mainly of glycerin in combination with a phenol-like substance.

No. 1604. Mull's Grape Tonic. "A crushed fruit tonic laxative. Cures constipation and stomach troubles." The Lightning Medicine Company, Rock Island, Ill. This preparation contains 12.2 per cent. of alcohol and 4.7 per cent. of solid residue, which residue gives the characteristics suggestive of senna as one of the constituents. If the preparation is not dependent upon a crushed fruit for its tonic laxative qualities it may be considered misbranded.

No. 1600. Neurilla. "A reliable and harmless calmative, indispensable in the treatment of nervousness." Dad Chemical Company, New York. A dark-reddish fluid, having an angelica or celery-like taste, said to contain the essential active principles of scutellaria and aromatics. The statement is made that its use is necessary to normalize nerve tension in the treatment of fevers, colds, child-birth, etc. Such statement, and others in the circular accompanying the preparation, should be eliminated to legalize the preparation. On examination the preparation was found to contain 20.3 per cent. of alcohol, and 25 per cent. solids. Part of these solids is sugar. The preparation has a decidedly sweet taste.

No. 1574. Nopal Liniment. "For man and beast." Manufactured by Pinon Medicine Company, Kansas City, Mo. An opaque, somewhat milky, brownish-colored liquid, containing much insoluble suspended matter. It has a pronounced odor of sassafras, and probably is dependent upon this oil for its quality as a liniment. The liquid contains 3.85 per cent. of alcohol, the total solids is 1.33 per cent., and the other soluble residue, which would include the essential oils, is 0.0544 per cent.

No. 1637. Haller's Pain Paralyzer. The Haller Proprietary Co., Blair, Neb. "The great remedy for neuralgia, colic, sprains, diarrhea, rheumatism, diphtheria, etc., and all kinds of pain." This preparation is quite rich in volatile oils, producing a transparent, yellow-reddish liquid. Contains 88 per cent. of alcohol, 0.446 per

cent. of total solids. It is recommended for too many diverse complaints to be considered legal.

No. 1638. *Alexander's Cholera Morbus Cure*. Alexander's Medicine Company, New York city. A liquid consisting of a large amount of suspended inorganic matter, and containing suspended calcium carbonate. It is stated on the label that it "always cures colic, cholera morbus, diarrhea, and all summer complaints." Illegal, on account of statement. Total solids, 27.52 per cent.; alcohol, 1.8 per cent.

No. 1584. *National Relief*. National Chemical Company, Caney, Kan. (2-oz. panel bottle.) Misbranded as a positive cure for fourteen ailments and all painful afflictions. Contains alcohol, ammonia, turpentine, and oil of sassafras.

No. 1585. *Make-Man Tablets*. Make-Man Tablet Company, Chicago, Ill. Misbranded, because of statement on label. In tin box of white tablets. Tablets coated with starch and sugar, and contain aloe, sugar, ferrous carbonate, phosphorous and strychnine.

No. 1586. *Doctor Taylor's Cherry Tonic*. The Richardson-Taylor Medicine Company, St. Louis, Mo. (12-oz. amber-colored bottle.) Contains 30.75 per cent. of absolute alcohol by volume, and 3.1 per cent. of total solids, and is an alcoholic solution of acrid bitter drugs.

No. 1587. *Brown's Cough Balsam*. Brown Medicine and Manufacturing Company, Leavenworth, Kan. (4-oz. panel bottle.) Misbranded, as it is said to be a positive cure for colds and all bronchial troubles. Contains 9.8 per cent. of alcohol, and has senega-like taste.

No. 1588. *Alfalfarine*. The Alfalfarine Company, Wichita, Kan. (10-oz. panel bottle.) A dark, alcoholic liquid, which has considerable sediment. Contains 20.7 per cent. of absolute alcohol by volume, and 3.8 per cent. of total solids, and is partly an alcoholic solution of bitter-tasting drugs.

No. 1589. *Dr. Jones' Red Clover Tonic*. E. Y. Grigg, Ottawa, Ill. (Pint amber-color bottle.) Contains 19.8 per cent. of absolute alcohol by volume, and 3.4 per cent. of total solids. It is an alcoholic solution of drugs of a bitter taste.

No. 1590. *Joy's Vegetable Sarsaparilla*. Edwin W. Joy Company, San Francisco, Cal. (14-oz. panel bottle.) A dark solution with considerable precipitate held in suspension. Misbranded, as it is said to be a positive cure for all diseases of the liver and kidneys. Contains 21.1 per cent. of absolute alcohol by volume, 21.7

per cent. of total solids, and is an alcoholic solution of the drugs common to compound sarsaparilla mixtures.

No. 1591. Dr. Griffith's Cough and Croup Syrup. The Donnell Manufacturing Company, St. Louis, Mo. (4-oz. bottle.) Misbranded, as it is said to be a cure for cough, croup, asthma, bronchitis, etc. It is a syrupy solution, containing tar and white pine.

No. 1592. Dr. Hulce's Disease Eradicator. Dr. H. J. Hulce & Sons, Leavenworth, Kan. (Pint panel bottle.) The solution contains an excess of cloudy, unsightly precipitate. Contains 13.4 per cent. of alcohol, and 8 per cent. of total solids. It is an alcoholic solution suggesting a stillingia compound with potassium iodide.

No. 1601. Coe's Cough Balsam. C. J. Park Company, New Haven, Conn. (4-oz. bottle.) It is misbranded, because of the statement on the literature claiming that it never fails to cure whooping-cough, croup, coughs, colds, asthma, etc. Contains 8.4 per cent. of absolute alcohol by volume. Contains morphine and syrup. It is probably a solution of expectorant drugs.

No. 1602. The Shaker Digestive Cordial. A. J. White, New York city. (4-oz. bottle.) Contains 7.3 per cent. of alcohol, and 43.4 per cent. of residue, including syrup. It is a solution containing the principles of a number of bitter drugs.

No. 1603. Dr. Lyon's French Periodical Drops. Dr. J. L. Lyon, New Haven, Conn. There is no label on the bottle. Misbranded, on account of statement on carton. Contains alcohol and 1.4 per cent. of total solids. It seems to be an aromatic solution of ergot and oil of savin.

No. 1605. Congress Bitters. Dundas Dick Company, New York city. (Pint panel bottle.) Contains 31.2 per cent. of alcohol and 3.1 per cent. of total solids. Misbranded, as it claims to be a cure for dyspepsia, indigestion, and general debility. Is an alcoholic solution of bitter drugs aromatized with orange and a calamus-like drug.

No. 1606. Dr. Langley's Anti-Lean. W. & L. Medicine Company, Buffalo, N. Y. Misbranded, on account of the character of the label. Contains 28.6 per cent. of alcohol and 11.7 per cent. of total solids, including syrup, and is a solution of aromatic substances.

No. 1610. Lyon Nerve Tonic. Nerve Tonic Company, Kansas City, Mo. (12-oz. bottle, amber-colored.) Misbranded, as it claims to cure twenty-three different ailments, several of which are usually

considered incurable. Contains syrup, a preparation of celery, and potassium bromid.

No. 1623. Mann's Wonderful Catarrh Remedy. Mrs. E. C. Mann, Detroit, Mich. ($\frac{1}{2}$ -oz. wide-mouth bottle.) Contents are suggestive of menthol.

No. 1624. Bunson's Cream Catarrhal. Misbranded, as it claims to be the only cure in the world for catarrh, hay-fever, and cold in the head. (1-oz. wide-mouth bottle.) Contains white petrolatum and menthol.

No. 1625. The Great South American Nervine Tonic, Stomach and Liver Cure. Dr. E. Detchon, Crawfordsville, Ind., and Buenos Ayres, South America. In a pint bottle, containing one inch of dirty gray sediment. Misbranded, as it claims to be the greatest cure for every known ailment. Contains 15.1 per cent. of alcohol and 12.6 per cent. of total solids. This is a weak solution of aromatic drugs.

No. 1626. Doctor White's Compound Dandelion Alternative. A. R. White, M. D., Indianapolis, Ind. Contained in pint panel bottle. Unsightly solution, due to the large amount of precipitate in suspension. Misbranded, as it claims to be a cure for several diseases. Contains 18.5 per cent. of alcohol, 20 per cent. of total solids. A solution of bitter tonic drugs.

No. 1627. Haller's Barb-wire Liniment. The Haller Proprietary Company, Blair, Neb. (8-oz. panel bottle.) Misbranded, as it claims to be a sure cure for cuts, wounds, cold sores, etc. Composed of constituents of oil of tar.

No. 1628. Huff's Penetrating Liniment. Huff & Murray, Potwin, Kan. (4-oz. panel bottle.) Misbranded, as it claims to be a cure for rheumatism, neuralgia, sore throat and other ailments. Is a reddish-colored liquid, probably composed in part of oil of turpentine.

No. 1633. Red Lion Catarrh Cure. Root-Tea-Na-Herb Company, Akron, Ohio. (2-oz. wide-mouth bottle.) Misbranded, as it claims to be a cure for catarrh. Contains camphor with salt and sugar, and a red coloring matter.

No. 1634. Dr. Sawyer's Family Cure. Dr. A. P. Sawyer Medical Company, Chicago, Ill. Misbranded, as it claims to be a cure for all diseases of the stomach, liver, kidneys and bowels. Contains 15.6 per cent. of alcohol, 22.8 per cent. of total solids. It is an aromatic solution of bitter drugs.

No. 1635. Dickson's Asthma Cure. Haller Proprietary Company, Blair, Neb. Misbranded, as it claims to be a cure for asthma.

Contains 67.1 per cent of alcohol. Is an alcoholic solution of pungent volatile oils.

No. 1640. Bosche's German Syrup. L. M. Green, Woodbury, N. J. (4-oz. panel bottle.) Misbranded, as on the carton it claims to be a certain cure for all diseases of the throat and lungs, whooping-cough and croup. Solution consists of syrup of tar and expectorant drugs. The morphine content is stated upon one end of the carton.

No. 1645. Ginger. Grand Union Tea Company, Brooklyn, N. Y. The oleoresin content accepted. Ash content 6 per cent. normal. Microscopical examination shows no foreign starch; the starch present, as well as the other elements, were characteristic of ginger.

No. 1646. Cloves. Grand Union Tea Company, Brooklyn, N. Y. The ether extractive, although slightly lower than normal standard, is accepted. The ash content within the limit of the Kansas standard. Microscopical examination shows small amount of starch and clove stems. Starch very probably accidentally included, and clove stems not in excess.

No. 1647. Cloves. Midland Grocery Company, Denver, Colo. The ether extracts normal. Total ash within the limit of the Kansas standard. Microscopical examination shows no foreign added material.

No. 1648. Mustard. Midland Grocery Company, Denver, Colo. Ash constituent normal. Starch present not in excessive amount according to United States pharmacopoeal standard.

No. 1649. Cinnamon. Midland Grocery Company, Denver, Colo. The ethereal extract and total ash indicate a low grade of cinnamon. This is confirmed by a microscopical examination, which reveals a certain percentage of cassia buds, perhaps a mixture of 10 per cent. of cassia cinnamon.

No. 1650. Pepper. Midland Grocery Company, Denver, Colo. Ethereal extract, together with a microscopical examination, proves this to be acceptable.

No. 1651. Allspice. Midland Grocery Company, Denver, Colo. The ash content is 1.3 per cent. lower than the Kansas standard, and hence is accepted. The microscopical examination proves this to contain rather an abnormal amount of stone cells, but this may happen with allspice of certain normal grades.

No. 1652. Cinnamon. Kohlfing & Co., Leavenworth, Kan. Oleoresin 3.1 per cent. (low), ash 3 per cent. Microscopically the compound does not show any foreign material.

No. 1653. Ginger. E. R. Durkee, New York city. Ash content 8 per cent. (high), 4 per cent. oleoresin (normal). This spice contains a large amount of wheat bran, as shown microscopically by the characteristic elements of that substance.

No. 1654. Mustard. Hanlay-Kensella Company, St. Louis, Mo. Contains 5.8 per cent. of ash (low). This spice is free from foreign material. Microscopically the specimen does not show normal properties.

No. 1655. Cayenne Pepper. Hanlay-Kensella Company, St. Louis, Mo. Contains 7 per cent. of ash (high), 14.7 per cent. non-volatile ether extract (normal). This spice is free from foreign material.

Kansas Campaign for Pure Oysters.

The BULLETIN for February, 1907, contained an article on oysters, in which the oyster was followed from the shell to the interior dealer and consumer, and the "inhuman" and unsanitary treatment to which this delicious sea-food was subjected was clearly pointed out. It was announced that the defenseless bivalve was worthy of better treatment, and that Kansans were entitled to become acquainted with the sea flavor, and incidentally to be relieved of the necessity of buying added water and dirt; and thus was begun the campaign for pure oysters.

Extensive investigations were conducted as to all phases of the commercial side of the business, and Professor Willard, food analyst for the Board, was commissioned to continue the investigations, together with extended analytical inquiry to ascertain facts to form the basis of a definite conclusion and a reasonable standard to be recommended to the Board for adoption. The report of Professor Willard in this BULLETIN summarizes this work, and is an important contribution to the literature on this subject, with which all food and health officials should familiarize themselves.

At the November meeting of the State Board of Health a standard was adopted which is, we believe, the first standard adopted by any state for oysters. This standard is as follows:

"Oysters are *Ostrea virginica* (New Inter. Encycl.), and contain not less than ten per cent. of total solids."

This standard in effect excludes the addition of water, either through melted ice or otherwise. It is to be noted that the standard but indicates the minimum amount of solids required, and must not be construed as permitting the addition of water to oys-

ters to bring them down to the minimum limit indicated in the standards. It should also be noted that the addition of water to oysters is in violation of section 7 under "foods," of the Kansas food and drugs law.

It is a source of much gratification to this department to know that the shipments now received into the state are generally in compliance with the requirements; that the old-fashioned unsanitary tub is replaced by modern containers, approaching to a greater or less degree a sanitary package, the refrigeration being made by ice packed around the oysters instead of among them, and the containers themselves cleaner and susceptible of being cleaned, which the paraffined tub is not.

We are aware that there are many oysters shipped to Kansas City, St. Joseph and Omaha by the tub route that are repacked in proper containers for the Kansas market, but it is confidently expected that dealers will insist on having only such as are properly packed by the shuckers, and not take the risk of marketing a water-soaked oyster that may be substandard.

Finally, but not least, the express companies doing business in this state have signified their willingness and intention of cooperating with this department in enforcing the law as applied to oysters. Verily, the prediction is fulfilled, and Kansans are now acquainted with the sea flavor.

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector.

Some Facts Concerning Kansas Water-supplies.

Read before the fourth annual conference of state, county and municipal health officers,
by WM. C. HOAD, sanitary and civil engineer, State Board of Health.

Under the water and sewage law of March, 1907, all existing water-works companies, both municipal and private, were required to file with the State Board of Health certain information relating to the design, construction and operation of their plants. This requirement has been generally complied with, and maps and plans and other data relating to practically all the water-works of the state are now on file in the office of the State Board.

The data contained in these reports are of interest from a good many points of view. Particularly those relating to the sources of supply, the methods of purification employed, the question of municipal or private ownership, and the use of meters are of general interest, and in the present paper certain of these relationships will be shown. In order to avoid giving merely a series of tables, and still to present the data intelligibly and as briefly as possible,

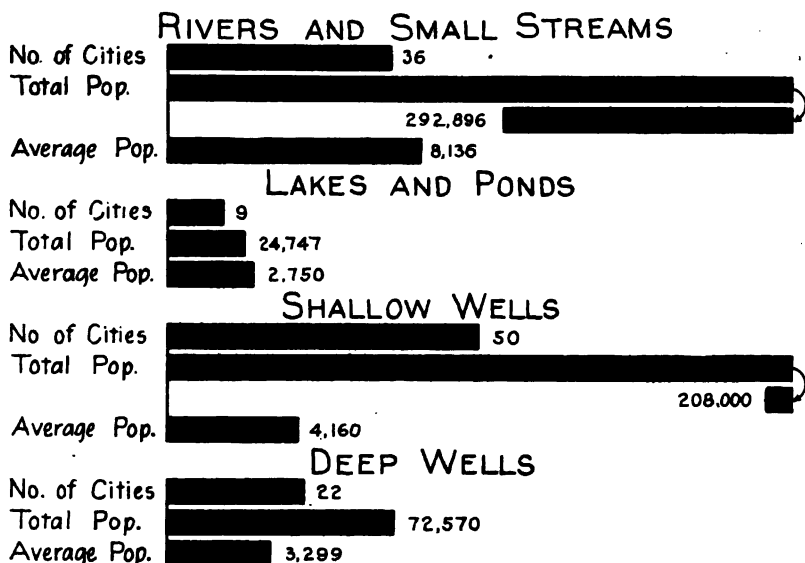


FIG. 1. Showing sources of supply.

a graphical method is used. In the case of nearly all the larger cities, and of many of the smaller ones, information obtained from personal visits, by correspondence and otherwise has been used to supplement that contained in the official reports.

In figure 1 the various water-works are grouped with reference to their sources of supply. The first two groups comprise the surface-water supplies and the last two the ground-water supplies. The diagrams show, first, the number of cities using the sources of supply named; second, the total population of the cities of each group; and third, the average population of the cities of the group. The ratios are represented by the relative lengths of the thick, black lines, which are carefully platted to scale. The lines of "average population" are drawn to a scale ten times that of the lines representing "total population." These scales are the same in all the four figures shown. All populations are from the assessors' census of 1907.

Of the thirty-six cities taking water from rivers or other streams, those having populations of more than 2000 are as follows, in the order of their size:

- | | | |
|------------------|-----------------|-----------------|
| 1. Kansas City. | 10. Chanute. | 19. Neodesha. |
| 2. Leavenworth. | 11. Winfield. | 20. Beloit. |
| 3. Atchison. | 12. Ottawa. | 21. Fredonia. |
| 4. Coffeyville. | 13. Galena. | 22. La Harpe. |
| 5. Parsons. | 14. Cherryvale. | 23. Burlington. |
| 6. Independence. | 15. Rosedale. | 24. Oswego. |
| 7. Fort Scott. | 16. Herington. | 25. Humboldt. |
| 8. Iola. | 17. Osawatomie. | 26. Marion. |
| 9. Emporia. | 18. Caney. | |

The nine cities taking their supplies from lakes and ponds, mostly impounding reservoirs constructed on very small streams, are as follows:

- | | | |
|----------------|------------------|------------------|
| 1. Wellington. | 4. Olathe. | 7. Caldwell. |
| 2. Horton. | 5. Yates Center. | 8. Smith Center. |
| 3. Paola. | 6. Garnett. | 9. Pleasanton. |

Of the fifty cities securing water from shallow wells, the following named are those having a population of 2000 or more:

- | | | |
|-------------------|------------------|-----------------|
| 1. Topeka. | 9. Concordia. | 16. Hiawatha. |
| 2. Wichita. | 10. Manhattan. | 17. Eureka. |
| 3. Hutchinson. | 11. Abilene. | 18. Norton. |
| 4. Lawrence. | 12. Dodge City. | 19. Kingman. |
| 5. Arkansas City. | 13. Garden City. | 20. Anthony. |
| 6. Argentine. | 14. Clay Center. | 21. Larned. |
| 7. Junction City. | 15. Holton. | 22. Marysville. |
| 8. El Dorado. | | |

One city in the foregoing list (Abilene) takes its supply from natural springs. Arkansas City also secures a part of its supply from a similar source. Another city (Kingman) is at present replacing its well supply with water piped into town from large springs about three miles away.

Of the twenty-two cities supplied from deep wells, those with populations of 2000 are as follows:

- | | | |
|----------------|---------------|---------------------|
| 1. Pittsburg. | 6. Columbus. | 10. Scammon. |
| 2. Salina. | 7. Fontenac. | 11. Goodland. |
| 3. Newton. | 8. Girard. | 12. Belleville. |
| 4. Great Bend. | 9. Weir City. | 13. Baxter Springs. |
| 5. McPherson. | | |

The distinction between "deep" and "shallow" wells is necessarily more or less arbitrary, but the attempt has been made to have the terms indicate a real difference in the character of the water. For the present purpose "shallow" wells are those which draw water from the surface sheet or stratum of the general body of ground-water, at depths of not more than 75 or 100 feet, and under conditions which render possible the direct contamination of the supply from the surface of the ground. Most of these wells are sunk in sandy or gravelly soil to depths of 20 to 40 feet, the ordinary level of the water-table being from 10 to 30 feet below the surface. On the other hand, those classified as "deep" wells are those which pierce some nearly impervious stratum and draw a supply from a lower ground-water layer, under conditions that render very improbable the direct contamination of the supply from surface drainage. The wells supplying several cities in the southeastern part of the state are very deep; for example, the four Pittsburg wells, from 1200 to 1500 feet deep; two wells at Colum-

bus, 900 and 1200 feet deep; two at Frontenac, 900 and 920 feet deep; one at Girard, 900 feet deep; and two at Weir City, 500 feet in depth. In some of these places the water nearer to the surface is impregnated with hydrogen sulfid, or is otherwise objectionable. On the other hand, the cities of Salina, Newton, Great Bend and McPherson, situated in flat river bottoms, have wells from 75 to 150 feet deep, but these wells extend down into a second or third stratum of the "underflow" stream and furnish water of an essentially different quality from that nearest the surface.

Ground-water supplies rarely need purification. In a few places the water contains iron in small amounts, and this is taken out by some simple process of aeration and sedimentation, as at Lawrence. In some of the deep-well supplies objectionable odors, hydrogen sulfid, for example, are removed by thorough aeration. In general, however, the water is pumped directly from the wells into the distribution system.

In figure 2, the cities shown in figure 1 as deriving their supplies from surface sources are classified with reference to the method of purification employed.

In seventeen cities, having a total population of 60,957, no purification, or practically none, is practiced. It should be stated in this connection that at most of these places the water is little used for drinking or cooking purposes. A number of these supplies, particularly the older ones, were built simply to furnish water for fire protection and lawn sprinkling.

In six cities, with a total population of 50,388, the water is settled in sedimentation basins for a longer or shorter period to remove the grosser sediment. In two or three of these a small amount of coagulant is used during times of high turbidity in the stream from which the supply is taken, but ordinarily plain sedimentation alone is employed.

Another group of six cities, with a combined population of 59,366, reinforce the sedimentation process with a more or less regular use of alum, or of iron sulfate, or of one of these coagulants in connection with lime. Under favorable circumstances, with well-designed settling-basins and excellent methods of operation, this process is capable of producing fairly clear water practically all the time. As usually practiced, however, a very inadequate amount of the coagulant is employed, the amounts to be used with the various conditions of the river are merely guessed at by the man in charge of the pumping-station, and the devices for mixing the coagulant and dosing it into the water are crude and primitive.

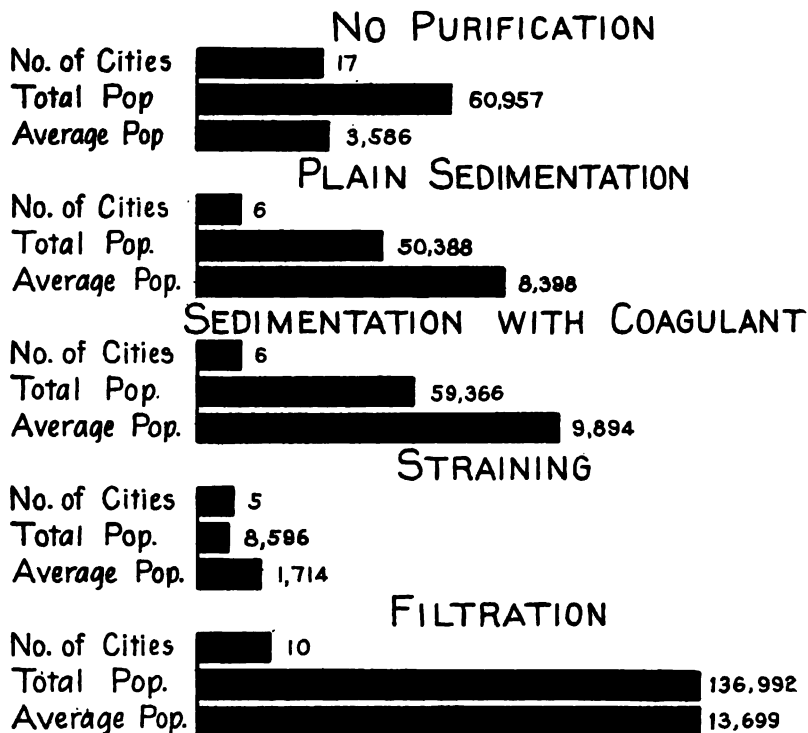


FIG. 2. Showing methods of purification of surface supplies.

Five small cities use a process which may be best described as straining through coarse material. The typical form of this device is a tunnel from the river to a point just below the pumping-station, this tunnel being filled with crushed stone or gravel through manholes extending to the surface. The water from the stream flows through this bed of crushed stone, and is taken up by the pumps at the inner end of the tunnel. Of course only the grosser impurities are intercepted.

Ten cities, having a combined population of 136,992, are supplied with water which is more or less perfectly filtered. Several of these plants have been built within the past few years, and represent good modern practice in rapid sand filtration. In two or three places the filter plants, though originally of sufficient size, are at present quite inadequate to perform the work required of them. This is notably true of Kansas City, where the filter plant has long been outgrown. In perhaps a majority of the cities the filters are operated merely for the purpose of removing sediment

from the water, no attention being given to the removal of disease germs. The use of alum is usually discontinued whenever the water in the stream is even fairly clear, and sometimes the filters are cut out altogether.

An encouraging feature to be noted here is the fact that a number of the cities included in this summary are planning to better their water-supplies. Emporia, Winfield, Wellington, Beloit, Marion and others are just putting into operation, or have planned for the future, ground-water supplies, to replace those from surface sources. Several other cities are looking toward modern filtration plants. The demand is becoming general for water that is uniformly good and wholesome and attractive and of good repute, and that is suitable for all purposes.

A matter of great interest to many people is the question of municipal ownership of water-works. In figure 3 the various water-works of the state are grouped with reference to whether they are owned by the municipalities or by private companies. It is here shown that of the 117 plants represented, 89 plants, serving a population of 315,628, are owned by the municipalities; and that 28 plants, serving a population of 287,882, are owned by private companies.

Figure 3 shows further the numbers of municipally and privately owned plants that furnish surface-water and ground-water to the public, together with the total population of each group and the average population of the cities composing the group.

Of the thirty-one cities supplied with surface-water by municipally-owned plants, those having populations of more than 2000 are :

- | | | |
|------------------|-----------------|-----------------|
| 1. Coffeyville. | 8. Galena. | 15. Olathe. |
| 2. Independence. | 9. Wellington. | 16. La Harpe. |
| 3. Fort Scott. | 10. Herington. | 17. Burlington. |
| 4. Iola. | 11. Osawatomie. | 18. Oswego. |
| 5. Emporia. | 12. Caney. | 19. Humboldt. |
| 6. Chanute. | 13. Neodesha. | 20. Garnett. |
| 7. Ottawa. | 14. Paola. | 21. Caldwell. |

There are fifty-eight municipal plants furnishing ground-water supplies. Of this number twenty-three supply cities of over 2000 population:

- | | | |
|-------------------|------------------|-----------------|
| 1. Topeka. | 9. Garden City. | 17. Kingman. |
| 2. Arkansas City. | 10. Clay Center. | 18. Scammon. |
| 3. Newton. | 11. Holton. | 19. Goodland. |
| 4. Junction City. | 12. Columbus. | 20. Sterling. |
| 5. El Dorado. | 13. Hiawatha. | 21. Anthony. |
| 6. Concordia. | 14. Girard. | 22. Belleville. |
| 7. Manhattan. | 15. Eureka. | 23. Larned. |
| 8. Abilene. | 16. Norton. | |

Twelve of the fourteen cities supplied with surface-water by

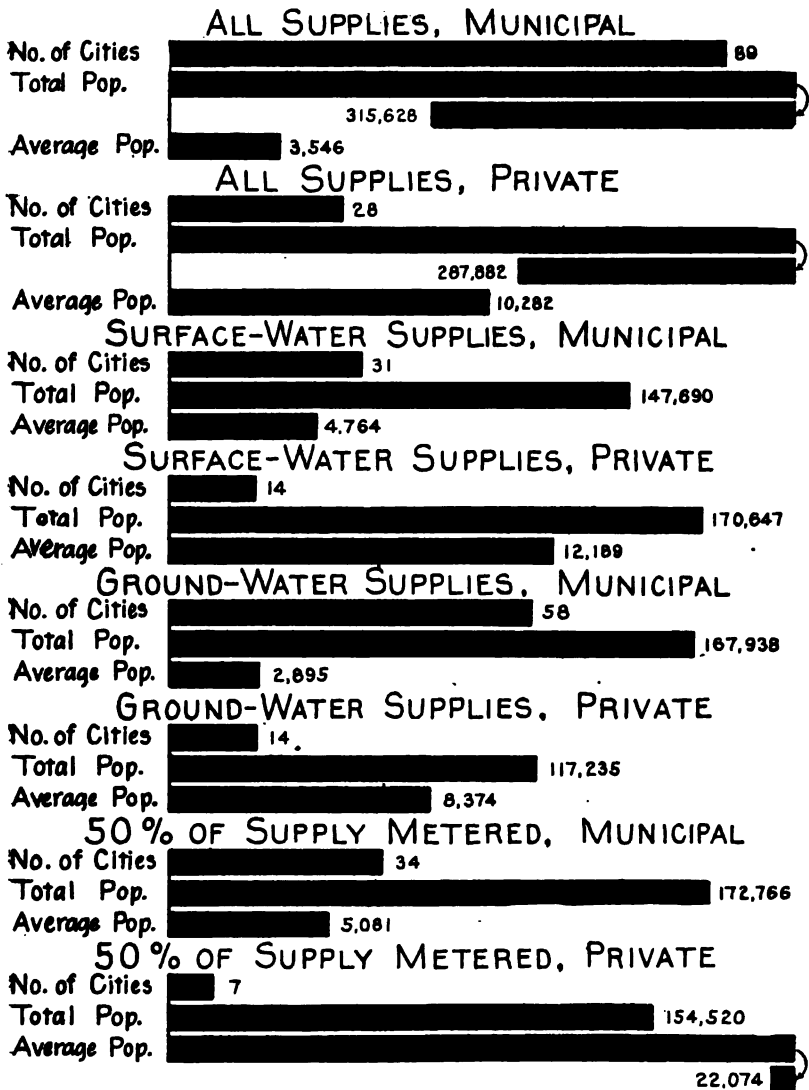


FIG. 3. Showing relation of ownership to source of supply, and the use of meters.

privately-owned plants have populations greater than 2000. These twelve include four of the nine cities of the first class in Kansas:

- | | | |
|-----------------|--------------|--------------------|
| 1. Kansas City. | 5. Winfield. | 9. Fredonia. |
| 2. Leavenworth. | 6. Rosedale. | 10. Council Grove. |
| 3. Atchison. | 7. Horton. | 11. Yates Center. |
| 4. Parsons. | 8. Beloit. | 12. Marion. |

Of this number, Winfield has a new municipal plant just being

put into operation, and Beloit and Marion have recently entered into agreements for buying out the private companies, discarding the old surface supplies, and developing new supplies from wells.

All but one of the fourteen private companies supplying ground-water serve populations of over 2000. The cities are named in the following list :

- | | | |
|----------------|----------------|---------------------|
| 1. Wichita. | 6. Argentine. | 10. Frontenac. |
| 2. Pittsburg. | 7. Dodge City. | 11. Weir City. |
| 3. Hutchinson. | 8. Great Bend. | 12. Marysville. |
| 4. Lawrence. | 9. McPherson. | 13. Baxter Springs. |
| 5. Salina. | | |

Certain data relating to the use of meters are given near the bottom of figure 3. Eighty-one plants have reported definite figures regarding the use of meters. These eighty-one plants deliver a combined daily average of over 20,000,000 gallons of water, of which fifty-three per cent. is sold by meter. Forty-one of these plants sell by meter one-half or more of their total supply, and of this number thirty-four are municipal and seven are private plants. The larger plants of which fifty per cent. or more of the supply is sold by meter are :

- | | | |
|-----------------|----------------|--------------|
| 1. Kansas City. | 5. Parsons. | 8. Lawrence. |
| 2. Topeka. | 6. Fort Scott. | 9. Iola. |
| 3. Leavenworth. | 7. Hutchinson. | 10. Emporia. |
| 4. Coffeyville. | | |

In figure 4 are presented some of the data already shown in the preceding figures, together with new data relating to the average per capita water consumption, arranged with reference to the sizes of the various cities.

It will be noted that while the ratio of municipal plants to private plants over the entire state is as 89 to 28, among cities having populations of less than 2000 it is as 44 to 3; among those having populations between 2000 and 5000 it is as 31 to 13; among those between 5000 and 15,000 as 11 to 6.

A similar decrease may be shown in the ratio of the number of ground-water to that of surface-water supplies. These relations are probably adequately explained by the two facts that practically all the more recently constructed plants, mainly in the smaller cities, are owned by the municipalities, and that there has been a growing disposition to supplies from wells in preference to those from surface sources.

The last heavy line in each group in figure 4 shows the average daily per capita consumption of water for the cities of that group. In each group these figures are obtained by dividing the total

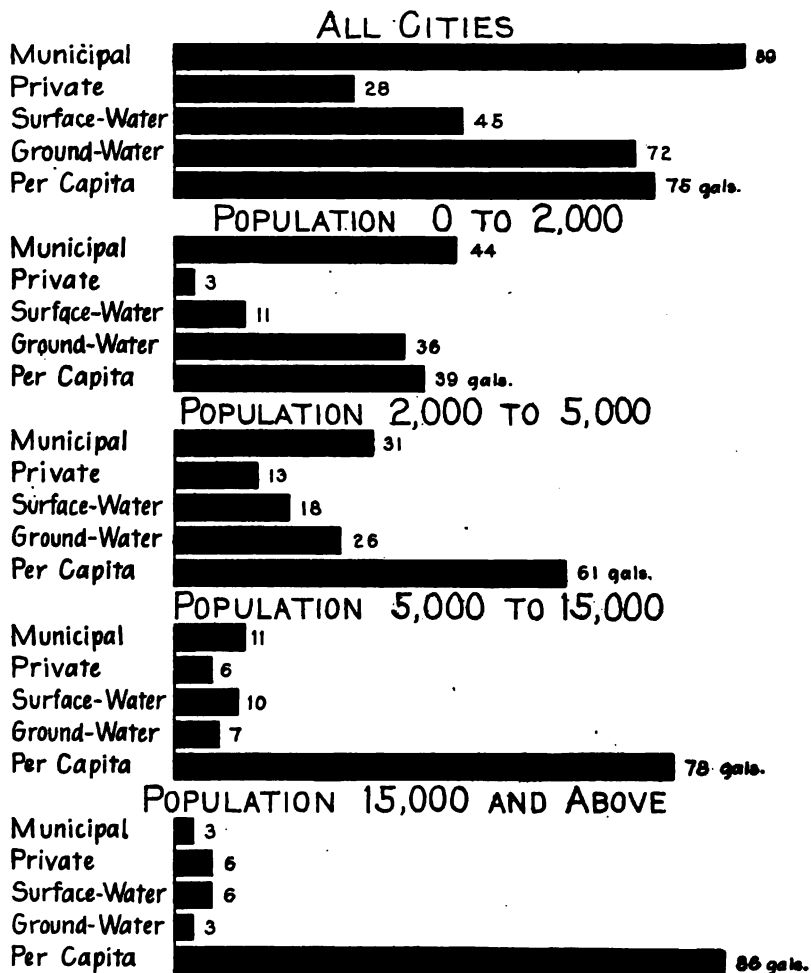


FIG. 4. Showing relation of size of city to ownership, source of supply and consumption.

quantity of water pumped by the total population. The higher figures for the larger cities are due to the fact that in these cities the water is used by a larger proportion of the entire population, and used more lavishly; also, to the larger proportional number of industries supplied with water.

"The victories that laurel life are fought and won within."

Inspection of the Country Slaughter-house.

Paper read before the fourth annual conference of state, county and municipal health officers, by Dr. E. L. SMOGTON, county health officer, Pottawatomie county.

No part of a health officer's work is more important or more in the interest of public health than the inspection and proper regulation of the country slaughter-houses. Probably no other institution concerned in supplying food to the public has been allowed to run with so little regard to the laws of sanitation or rules of common cleanliness, and this, too, in handling a food product the most easily of all foods to become contaminated, with the possible exception of milk. It is hard to believe that men supplying food to the public could maintain places so vile and filthy.

A few of the butchers have endeavored, as far as they knew, to build and maintain sanitary slaughter-houses. They have put in cement floors and removed the offal a short distance, but there is a lack of care in scrubbing and washing. The places soon become foul-smelling and filthy from bits of blood, offal and washings that are allowed to stay and dry on the walls, tools, and the floors. The trouble with them is that they do not know how to be clean. They need education on sanitary lines. Had Upton Sinclair extended his investigations to the country slaughter-house, he would have found ample material for another *Jungle*.

The average slaughter-house, as I have found it, consists of the merest old shell of a building, with plank floor, open walls, loose doors and windows, swarming with flies of all varieties and a harbor for rats and mice, situated in some out-of-the-way place where it would be least likely to be an object of inspection, always surrounded by a hog-pen. The place is constructed so the offal can be rolled out of the building through a hole in the wall or dropped through a trap in the floor. The hogs are depended upon to dispose of the offal, which they do more or less thoroughly as their number is few or great. If there are not enough hogs there will be a residue of offal left to putrify, attract flies and raise a stench.

The hogs always have a wallow on the side or under the slaughter-house. This wallow is full of hides, hoofs, scrapings of the hogs, scraps of offal, manure, etc. Putrid gases from this place rise up through the building to poison the freshly dressed meat and contaminate the whole place and the air for many rods around. Millions of flies infest these places—blow-flies and house-flies. They feed upon the filth outside. They smear it over themselves and

swarm back into the slaughter-house, track across the floors and tables, inoculating everything they touch with the infections from the scraps of carcasses outside. Can meat be dressed in such a place without becoming contaminated with the vilest filth? It cannot; and I am sure there would be a great deal more disease resulting from the use of meats than there is were it not that the meats are all cooked before they are eaten.

The model slaughter-house has a floor of cement, built on an incline to a trough in the center which acts as a drain to convey the blood and washings outside the building into the offal tank. The margins of the floor should be raised six or eight inches of cement. This makes a perfectly water-tight killing-basin in which any amount of water can be used without leaving a residue in cracks and crevices to putrify and make a stench. The building should be built upon the raised margins of the floor; it should be well and tightly constructed, with plenty of doors and windows for light and ventilation. The doors and windows should be well screened. The inside walls should be lined six feet high with oil-cloth or other washable material. The offal tank can be constructed of galvanized iron and placed upon wheels. It should be large enough to hold all the offal, blood and washings from a killing, and placed under the edge of the trough leading from the killing-bed. After the killing, it can be moved by hand to the hog-pen, which should be at least 100 yards from the slaughter-house, and dumped.

There can be but one objection to the feeding of offal when done in this manner, and that is the possible danger of infecting hogs with trichina. It is certainly a better method than dumping it into a stream, and butchers tell me it is practically impossible to bury or burn it; besides, they say, the feeding of the offal to hogs is a large item of their profit. After each killing the killing-bed should be thoroughly scrubbed with hot water and lye, and all blood-stains removed from the walls, pulleys and other implements used in killing. If tables are kept in the slaughter-house, upon which meats are cut and dressed, they should be covered with zinc and kept scrupulously clean with lye and water. The knives and all instruments that come in contact with the fresh meat should be treated in like manner. There is no reason why the slaughter-house cannot be kept as clean as a well-kept kitchen. I might add that the meat dressed in this model slaughter-house should be conveyed to the butcher-shop in a thoroughly clean wagon, with some means of protecting it from dust and flies while in transit.

The Excessively Good Man.

"He has no enemies," you say ;
My friend, your boast is poor :
He who hath mingled in the fray
Of duty that the brave endure
Must have made foes. If he has none
Small is the work that he has done.
He has hit no traitor on the hip ;
He has cast no cup from perjured lip ;
He has never turned the wrong to right.
HE HAS BEEN A COWARD IN THE FIGHT.



THINGS THAT COUNT.

Not what we have, but what we use;
Not what we see, but what we choose—
These are the things that mar or bless
The sum of human happiness.

The things near by, not things afar;
Not what we seem, but what we are—
These are things that make or break,
That give the heart its joy or ache.

Not what seems fair, but what is true;
Not what we dream, but good we do—
These are the things that shine like gems,
Like stars, in Fortune's diadema.

Not as we take, but as we give;
Not as we pray, but as we live—
These are the things that make for peace,
Both now and after Time shall cease.

—Clarence Urry.

BULLETIN

OF THE

Kansas State Board of Health.

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No. 2.

FEBRUARY, 1908.

VOL. IV.

The best "spring" blood medicine—WORK!

The best general tonic—A little play sandwiched with your work.

The best nerve restorer—Keeping sweet.

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The Joy of Living, page 48.

VITAL STATISTICS

Reported to the Kansas Board of Health for January, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|------------------------------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|------------|----------|------------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| The State...total, January, 1908..... | 72 77 | 56 55 | 46 65 | 6 | 132 167 | 21 26 | 123 126 | 3 4 | 459 126 | 1 0 | 107 126 | 1 2 |
| Allan | 3 | 1 | 1 | 1 | 1 | 1 | 15 | 1 | 16 | 0 | 4 | 0 |
| Anderson | 1 | 1 | 1 | 0 | 1 | 0 | 10 | 0 | 14 | 0 | 0 | 0 |
| Atchison | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 40 | 0 | 0 | 0 |
| Barber | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Barton | 5 | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 25 | 0 | 0 | 0 |
| Bourbon | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 0 | 4 | 0 | 0 | 0 |
| Brown | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 0 |
| Butler | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 5 | 1 |
| +Chase | | | | | | | | | | | | |
| -Chauteauqua | | | | | | | | | | | | |
| -Cherokee | 1 | 1 | 1 | 1 | 5 | 2 | 0 | 0 | 75 | 0 | 1 | 0 |
| -Cheyenne | | | | | | | | | | | | |
| Clark | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Clay | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Cloud | | | | | | | | | | | | |
| Coffey | 3 | 3 | 1 | 1 | 3 | 0 | 4 | 0 | 5 | 0 | 0 | 0 |
| +Comanche | | | | | | | | | | | | |
| Cowley | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crawford | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 0 |
| Decatur | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Dickinson | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Douglas | 5 | 4 | 2 | 0 | 12 | 1 | 1 | 0 | 2 | 0 | 0 | 0 |
| +Edwards | | | | | | | | | | | | |
| *Elk | | | | | | | | | | | | |
| Ellis | 2 | 0 | 0 | 0 | 1 | 1 | 9 | 0 | 2 | 0 | 0 | 0 |
| +Ellsworth | | | | | | | | | | | | |
| Finney | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Ford | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 14 | 0 | 0 | 0 |
| Franklin | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 |
| Geary | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| Gove | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +Graham | | | | | | | | | | | | |
| +Grant | | | | | | | | | | | | |
| Gray | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +Greely | | | | | | | | | | | | |
| Greenwood | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Hamilton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Harper | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 0 | 3 | 0 | 2 | 0 |
| Harvey | 0 | 0 | 1 | 0 | 4 | 1 | 4 | 0 | 3 | 0 | 2 | 0 |
| +Haskell | | | | | | | | | | | | |
| Hodgeman | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| +Jackson | | | | | | | | | | | | |
| Jefferson | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 6 | 0 | 14 | 0 |
| *Jewell | | | | | | | | | | | | |
| *Johnson | | | | | | | | | | | | |
| *Kearny | | | | | | | | | | | | |
| Kingman | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Kiowa | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| *Lincoln | | | | | | | | | | | | |
| *Linn | | | | | | | | | | | | |
| +Logan | | | | | | | | | | | | |
| *Lyon | | | | | | | | | | | | |
| +Marion | | | | | | | | | | | | |
| Marshall | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| +McPherson | | | | | | | | | | | | |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTY. | Tuberculosis. | | Typhoid fever. | | Diphtheria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|---------------|---------|----------------|---------|-------------|---------|----------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Meade..... | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Miami..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell..... | 1 | 1 | 1 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Montgomery..... | | | | | | | | | | | | |
| *Morris..... | | | | | | | | | | | | |
| †Morton..... | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Nemaha..... | | | | | | | | | | | | |
| *Neosho..... | | | | | | | | | | | | |
| †Ness..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 0 | 0 |
| Osage..... | | | | | | | | | | | | |
| *Osborne..... | | | | | | | | | | | | |
| Ottawa..... | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Pawnee..... | | | | | | | | | | | | |
| †Phillips..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie..... | 1 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | | | | | | | | | | | | |
| *Rawlins..... | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 8 | 0 | 0 | 0 |
| Reno..... | | | | | | | | | | | | |
| *Republic..... | | | | | | | | | | | | |
| Rice..... | 4 | 1 | 0 | 0 | 2 | 0 | 7 | 0 | 4 | 0 | 1 | 0 |
| Riley..... | | | | | | | | | | | | |
| †Rooks..... | 0 | 0 | 1 | 0 | 6 | 2 | 2 | 0 | 3 | 0 | 20 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell..... | | | | | | | | | | | | |
| †Saline..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 |
| Scott..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Sedgwick..... | | | | | | | | | | | | |
| †Seward..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 14 | 0 | 0 | 0 |
| Shawnee..... | | | | | | | | | | | | |
| Sheridan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Sherman..... | | | | | | | | | | | | |
| Smith..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | | | | | | | | | | | | |
| †Stanton..... | | | | | | | | | | | | |
| *Stevens..... | 0 | 0 | 0 | 0 | 15 | 2 | 4 | 0 | 8 | 0 | 0 | 0 |
| Sumner..... | | | | | | | | | | | | |
| †Thomas..... | | | | | | | | | | | | |
| †Trego..... | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Wabaunsee..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wallace..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Washington..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| Wichita..... | | | | | | | | | | | | |
| *Wilson..... | | | | | | | | | | | | |
| *Woodson..... | | | | | | | | | | | | |
| Wyandotte..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 90 | 0 | 0 | 0 |
| Coffeyville..... | 1 | 1 | 4 | 0 | 2 | 0 | 1 | 0 | 14 | 0 | 0 | 0 |
| Kansas City..... | 18 | 10 | 8 | 1 | 10 | 2 | 5 | 0 | 3 | 0 | 16 | 0 |
| Leavenworth..... | 3 | 3 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Parsons..... | | | | | | | | | | | | |
| Topeka..... | 3 | 3 | 0 | 0 | 11 | 1 | 17 | 0 | 10 | 0 | 2 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| State Institutions. | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

PROVERBS FOR THE PRUDENT.

"When a wise man misses the mark he counts it education and tries again."

"Courage is not absence of fear; it is presence of mind and conscious integrity."



Educational Exhibit of Food and Drugs.

Upon the urgent solicitation of Manager Brigham, of the Kansas Midwinter Exposition, the department of food and drugs of the State Board of Health undertook to make an educational exhibit illustrating adulterations in foods and drugs, and conveying certain other information of a sanitary nature by means of placards and banners.

The Midwinter show is an annual exposition held in the Auditorium in the city of Topeka, commonly called the pure food and industrial exposition. It seemed to be an appropriate place and a favorable opportunity to illustrate certain phases of food adulteration and misbranding, with which the average consumer should be familiar. Manager Brigham generously donated the space and erected the booth with its decorations without cost to this department, and the exhibit has been voted a success by those who have taken the trouble to give it a careful inspection.

The booth space covered about 200 square feet, and numerous samples of food products arranged in pairs, one being the pure product and the other being one of the more frequent adulterations of that product as found upon the market. Manufacturers' brands were not shown either in the pure or adulterated product,

as there was scrupulous care taken to refrain from advertising either favorably or adversely any manufacturer's products. Among the various samples displayed and illustrated might be mentioned the following:

Evaporated fruit, showing the natural fruit unbleached, and that bleached by the use of sulfur fumes.

Various samples of mustard — pure, adulterated, colored, etc.

A large assortment of jams, jellies, and preserves, from the pure fruit down to the samples that contain no fruit whatsoever.

A large number of samples of different kinds and grades of flour, both wheat and buckwheat, straight and compound.

A display of the various kinds of syrups found upon the market.

A considerable assortment of canned goods, illustrating the natural canned vegetables, those known as soaked, and those that are artificially colored.

Catsups, relishes, and pickles, colored and uncolored, alumed and unalumed.

Glucose products, displayed as "The Evolution of an Ear of Corn," with all the various by-products and refuse in the manufacture of this great staple of commerce.

Various samples of butter, showing degree of adulteration in surplus water or curd.

Milk and cream samples, indicating minimum standards, average standards and substandards.

Olive oils compared with cottonseed oils.

All kinds of flavoring extracts—good, bad and indifferent.

Samples of Hamburg steak preserved.

Legal amount of solids in standard oysters.

Over fifty samples of different coffees, both roasted and green.

Twenty-six different samples of teas.

Cocoa-beans, from the pod to the chocolate and cocoa.

Complete confectionery display.

Preservatives, saccharine and ethereal extracts occupied a prominent place.

A full and complete list of ground and unground spices, with illustrations of adulterated samples of fillers, exhausted spices, bogus coffee, etc.

A wax figure, dressed in garments colored with coal-tar dyes extracted from food products, occupied a prominent place in the booth and attracted considerable attention.

Various phases of drug adulteration were cleverly displayed by the drug analyst, among the most important of which was an illus-

tration of the deterioration of drugs. This included a striking example of the deterioration of baking-powder with age. Various sorts of chemical apparatus, microscope and analysts' paraphernalia for the purpose of demonstrating to those interested, occupied the rear space in the booth.

The following placards were prominently displayed upon the wall, and attracted a very considerable attention:

Coal-tar dyes in food products might also be called interior decorations.

Laws are of force only when public sentiment is back of them, and public sentiment is back of the Kansas food and drugs law.

What Kansas consumers need *most* is a stringent state law to exclude the tuberculosis dairy cow, and require the inspection of all animals slaughtered for food in the local or country slaughter-houses. WILL YOU HELP TO GET SUCH A LAW?

The power of the mind depends upon the power of the body; even the moral virtues are influenced by the bodily health, which receives its strength from the food consumed.

In the health of the people lies the strength of the nation.

Swat the fly.

The establishment of sound national physique is more important than a sound national finance.

The continued use of poisonous coal-tar colors, destroys the life-giving qualities of the food, retards digestion, causes dyspepsia.

OUR PLATFORM.—We insist on having fresh air, wholesome water, and pure foods and drugs for all the citizens of Kansas.

PRESERVATIVES IN FOODS.—The continued use of preservatives in foods produces disturbances of appetite, retards digestion, causes dryness of mucous membrane, adds extra burdens to the kidneys, causes loss of bodily weight, affects the nerves, shortens life.

The food of the child determines the future of the citizen and the physical strength of the potential fathers and mothers of the state.

Read the labels on all food and drugs products before you purchase, or don't complain if you are "stung."

Flies may infect food with germs of typhoid fever or consumption, and are therefore more dangerous than preservatives. Death to all flies.

Baking-powder over two years old is usually worthless, as its gas strength has been exhausted because of the chemical action that slowly but continuously takes place in all baking-powder.

The four best disinfectants.

The best natural disinfectant..... Sunshine.

The best germ disinfectant..... Formaldehyde.

The best physical disinfectant..... Soap.

The best moral disinfectant..... Publicity.

OYSTERS.—Kansas consumes approximately 180,000 gallons of oysters annually; formerly they contained from 15 to 20 per cent. of added water. Thus this department will save to the consumers \$54,000 annually on this one item, based on a 15 per cent. water content, at the usual price of 50 cents per quart.

If a compound food or drug product is named after two or more of its ingredients, the predominating ingredient should be named first; thus, a label reading "Cane and Maple Syrup" indicates that it contains more cane syrup than maple syrup.

OLIVE-OIL PROBLEM.—If pure olive-oil costs \$3.50 per gallon, and cottonseed-oil costs 50 cents per gallon, what would the consumer lose on one gallon of olive-oil in case it was adulterated with 50 per cent. of cottonseed-oil? Answer, \$1.50 lost to the consumer.

MAPLE SYRUP PROBLEM.—If maple syrup costs \$2 per gallon and cane syrup costs 50 cents per gallon, what would the consumer lose on one gallon of maple syrup in case it was adulterated with 50 per cent. of cane sugar? Answer, 75 cents lost to the consumer.

INSPECTION DEPARTMENT.—From April 1 to December 31, 1907:

| | |
|-------------------------------------------------------------|-------|
| Number of inspections of grocery-stores..... | 6,360 |
| Number of inspections of bakeries | 1,025 |
| Number of inspections of butcher-shops | 810 |
| Number of inspections of slaughter-houses | 320 |
| Number of inspections of hotels..... | 205 |
| Number of inspections of restaurants | 950 |
| Number of inspections of dining-cars..... | 20 |
| Number of inspections of ice-cream and pop factories..... | 275 |
| Number of inspections of drug-stores | 855 |
| Number of inspections of jobbing and manufacturing houses.. | 250 |
| Number of places ordered to be cleaned..... | 1,820 |
| Number of chemical analyses of food and drugs..... | 1,000 |

LABELS.—Flavoring products that are labeled "Extracts" indicate that such are of standard strength and quality; if it is called "Flavor," it indicates such to be less than standard strength, or an imitation product.

Example.—"Extract of Lemon" means a standard product. "Lemon Flavor" means under standard strength. "Artificial Lemon Flavor" means that it does not contain any genuine lemon oil, but is an entirely imitation product.

Food Inspector Kleinhans was in immediate charge of the booth during most of the exposition, assisted by Assistant Analyst Jackson of Professor Bailey's department, and Assistant Analyst Zeifle of Professor Sayre's department.

Copies of the BULLETIN of the State Board of Health and Professor Bailey's Kitchen Tests were given to those who desired them.

It is contemplated to give this exhibit another year, when other features of the department's work will be exemplified.

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector.

The Food and Drugs Law From a Commercial Chemist's Standpoint.

Paper read before the Fourth Annual Conference of State, County and Municipal Health Officers.
By RUDOLPH HIRSCH, Chemist, Kansas City, Mo.

When asked to read a paper before this conference, I was considerably "frustrated" to think that I would be arrayed against so formidable an assembly as the health officers of the state of Kansas. I was, however, very glad to have the opportunity of meeting the representative men of this state. While I am a native of Ohio, which, according to some, ought to be known as the "United States of Ohio," on account of the political propensities of its citizens, still, I always was anxious to know more about the state of Kansas.

I remember with what pleasure I read William Allen White's *Boyville Stories* and *In Our Town*. If those were typical Kansas folk, I longed to know them. I also remember, a couple of years ago, on the occasion of the Grand Army reunion at Boston, where all the veterans looked alike, until along came a squad wearing large sashes upon which was printed, "We're from Kansas." I had a friend over home—a native of Kansas. Whenever we had an exceptionally bright day, and the sky so blue and cloudless it almost hurt the eyes, my friend would say, "Oh, a typical Kansas day." I then decided that Kansas had other things besides cyclones, droughts, and grasshoppers, and I thought that if I could not be from the United States of Ohio, I would like to be a Kansan. And now that desire has almost been fulfilled. I could not come quite all the way, but I am now so near that about the only ties that bind me to the East are Missouri taxes. I am indeed glad to meet you all, and I hope that after I finish my paper you won't bar me out of the great "Sunflower State," but will let me come again.

I am very glad to have the opportunity of coming before you and giving you some idea of the difficulties that confront the commercial chemist who is trying to obey the spirit as well as the letter of the various pure food laws.

To put it mildly, the pure food chemist has had a hard row to hoe during the past eighteen months. With the birth of a national pure food law came a wealth of legislation by the various states and municipalities, all built upon the same general plans, but most of them with some variations to complicate matters. In some cases there was special legislation which placed an entirely new aspect upon some things.

While these matters may seem trivial, nevertheless they are of great importance to such firms as do chiefly an interstate business. These firms primarily must conform to the national law, and, after having done so, must investigate the laws of the states into which shipments are made, and either relabel their goods or restrict their sales. To illustrate, I have in mind one case where all flavoring extracts must bear the percentage of alcohol upon them. This is not required in all states, nor is it required by the national law in the case of foods. Again, the national law, and most of the state laws, state that if a weight be given on a package it must be the true net weight; other states insist that all packages must bear a statement of the true net weight.

There are a number of objections that can be registered against such an enactment, the chief of which of course would be that there is no way to guarantee against shrinkage in certain classes of goods. A package may be of a true net weight when packed, but when shipped to an arid country it stands to reason that it will suffer a natural shrinkage. Furthermore, there can be no real objection to goods being sold by the package. I might offer a load of hay for sale. You ask me how much it weighs. I tell you I don't know; I'll sell it as it stands. Would this not be a legitimate transaction of business?

These variations of the laws of different states are by no means the most serious things that come up for consideration in connection with getting into line, so to speak. We have not only this to contend with, but in doing a jobbing business we of course come into contact with the manufacturers, and this, at times, is a realization of the old physics problem, "What will happen when an irresistible body meets an immovable body?" As in the case of physics, considerable heat is developed, and finally we are compelled to refer the whole matter to the powers that be, and anxiously await, with fear and trembling, the reply, a vindication or defeat. This is particularly the case with misbranding. For example, mustard with a turmeric filler, in other words, sailing under false colors, will frequently innocently find its way into a shipment of mustard sardines and prepared mustard. Immediately a wealth of eloquence is dictated to the stenographer, interspersed with burning words and fiery postscripts, and started on its way to the manufacturer, only to receive in reply the very polite information that turmeric is a condiment, and a necessary adjunct to prepared mustard. After a wealth of correspondence, consuming about all of

the profits in postage, there finally appears a package of stickers, all neatly printed with the word "Turmeric."

The question of properly labeling products is one of considerable trouble to quite a few manufacturers. The fact that a firm doing business in several states cannot use the name of the home office, if it tends to act as a deception on the consumer, is not thoroughly understood, by any means. Let me illustrate with an example. If a firm has two establishments for the preparation of sweet corn, one in Baltimore and the other in Maine, there could be no objection taken to the branding of both products with the Maryland address; but if, on the other hand, they were branded with the Maine address exceptions could and probably would be taken. The reason is quite clear. Maine corn is a more desirable article by far than the Maryland product would be, and if prices were asked, without ever showing samples, the Maine product would command the higher price. Thus, a deception would be worked on the consumer. Very recently, just such a case was brought to my attention. We purchased a shipment of canned apples, packed in Arkansas, by a firm whose home office is in Michigan. It bore the Michigan address. Kind words, arguments, legal opinions and threats were met with kind words, arguments and counter threats, but no new labels. After several weeks of such a violent engagement a truce was declared. We are resting on our arms and Washington is settling the affair.

But I do not want to tire you with too lengthy a discussion of these friendly "bouts" that go to make up the diversions in the daily routine. I do want to assure you gentlemen, however, that you, as health officers, entrusted with the enforcement of pure food laws, are not the only candidates for early gray hairs. We will be glad to be graced with the silvery locks of dignity. Our chief fear is that, with a continuation of the present conditions, we will be absolutely devoid of hirsute adornment.

Let me pause to tell you a little story. A number of commercial men were sitting in the lobby of the hotel in a small town, resting after a strenuous day, entertaining and amusing each other as best they could. One of the party, who had remained silent throughout the time, was approached and asked to offer something in the way of entertainment. He begged to be excused, but, upon being urged, he volunteered with the statement that he was a mind-reader and could tell them their particular lines of business. He immediately proved his assertion to the satisfaction of all present. Then, to further illustrate his peculiar abilities, he offered to tell

them to what particular religious faith they belonged. Thus he picked out the Methodists, Baptists, Catholics, and so on, his statement in each case being verified. It seemed quite marvelous to his hearers, and in looking around they spied a thin, emaciated fellow buried deep in thought, seated in a far-off corner of the room. He was to serve as subject for the final test. He was brought over into the crowd, and the gentleman with the peculiar gift grasped him by the hand, looked him in the eye, and said: "You're a disciple of John Alexander Dowie." "I'm not," came the prompt reply. "I'm a pure food chemist; been studying food laws. That's what makes me look that way."

One other point of importance is the proper interpretation of the present regulations, and an ability to conform with the food standards, which, although they have no weight in law directly, they undoubtedly will serve as a basis for prosecution. In this respect I might mention the case of tea. Tea, of course, is a stranger in a strange land, and upon arrival at the portals of this country must stand a rigid inspection to establish its right to associate with American pure foods. By authority of an act of Congress approved March 2, 1907, the Treasury Department has established provisions (Circular 16, February 6, 1905, United States Treasury Department) for the investigation of teas upon arrival at our ports of entry. There is a tea commission which adopts standards to which these teas, when brewed, must conform. Briefly outlining the method, a consignment of tea arrives in this country, is placed in bonded cars, and sealed. Upon arrival at destination, a government official breaks the seal on the cars, has the tea transferred to a bonded warehouse, and then takes samples of same. The tea is then held until released after Treasury Department inspection. In other words, the Treasury Department says that the tea is of such a quality as to admit it into interstate commerce.

In the standards of purity promulgated by the Agricultural Department, tea is defined as follows: "Tea is the leaves and leaf-buds of different species of *Thea*, prepared by the usual trade processes of fermenting, drying and firing, meets the provisions of the act of Congress approved March 2, 1897, and the regulations made in conformity therewith, (Treasury Department Circular 16, February 6, 1905,) conforms in variety and place of production to the name it bears, and contains not less than four per cent. nor more than seven per cent. of ash.

You will notice that this specifically states the limits of ash. In an attempt to ascertain whether the teas passing Treasury Depart-

ment inspection have an ash content lying between these limits, we found a number of teas, chiefly South China, that had an ash content in some cases as high as eight per cent. and even more. Here we have teas legally passing Treasury Department inspection, but not conforming to the Agricultural Department standard. Now, what would you do in such a case, gentlemen?

Thus I might continue *ad infinitum*, but your secretary, who has had considerable experience in these lines, wisely limited my time to ten minutes. I will not encroach upon the next speaker's time any more. I just want to relate an old axiom I often heard my father quote. It was as follows: "Keep your head cool and your feet warm, keep your mouth closed and your bowels open, and walk on the sunny side of the street." I have adapted that to the spirit of the times, for the benefit of the vendors of food products, to read as follows: "Keep your store clean and your ware covered, keep your labels right and your goods pure, and you'll stay on the right side of the law."

An Open Letter to Pharmacists and Dealers in Alcohol.

The undersigned has become aware of the fact that there is at present transported into the state of Kansas a considerable quantity of alcohol that is below the official standard. Many of the preparations made by the use of this alcohol and by different dilutions of the same are sub-standard as to the result, and it therefore becomes necessary to notify the retail druggists and all others concerned that this article must be regarded as illegal, inasmuch as it does not conform to the requirements of the United States Pharmacopœia.

The article which is now shipped into Kansas as alcohol is known as 188 proof. The United States Internal Revenue Regulations and Instructions concerning distilled spirits defines proof spirits as follows:

"Section 3249, Revised Statutes, provides that proof spirit shall be held to be that alcoholic liquor which contains one-half its volume of alcohol of a specific gravity of seven thousand nine hundred and thirty-nine ten-thousandths (.7939) at sixty degrees Fahrenheit." (Alcohol of the latter specific gravity is practically absolute alcohol.)

It will therefore be seen that 188 proof alcohol is a 94 per cent. alcohol by volume, whereas the official alcohol is 94.9 per cent. I would strongly urge that dealers send into the state a 190 proof alcohol. This would correspond to practically 94.9 per cent. Alcohol, being hygroscopic in character, may probably be reduced by

natural causes to 94.9 per cent. by the time it reaches the retailer. It may be argued that a large part of the alcohol that is sold by the druggists need not be stronger than 188 proof (94 per cent.), and therefore it is a needless requirement that all the alcohol should be of higher percentage. In reply to this suggestion I would state that it is a very simple matter to produce an alcohol of a lower percentage from one of the higher percentage by following the directions of the United States Pharmacopœia, which are as follows:

"Mix V volumes of the stronger alcohol with distilled water to make V volumes of product. Allow the mixture to stand until full contraction has taken place and until it has cooled, then make up the deficiency in the V volumes by adding more distilled water.

"*Example.*—An alcohol of 80 per cent. by volume is to be made from an alcohol of 94.9 per cent. by volume. Take 30 volumes of the 94.9 per cent. alcohol and add enough distilled water to produce 94.9 volume."

The directions for dilution by weight, found on page 35 of the United States Pharmacopœia, are quite as simple as the above.

A reasonable time is suggested by this department for correcting this misunderstanding on the part of the druggists and dealers concerning this common solvent and extractive fluid so necessary to the making of standard preparations, and it is to be hoped in the near future that none of the substandard alcohols will be found in the hands of the retailer as medicinal alcohol or sold as such.

Approved:

S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector.

L. E. SAYRE,

Director of Drug Analysis, State Board of Health,
University of Kansas, Lawrence, Kan.

A Plea for Good Roads.

Physicians of the State of Kansas:

GENTLEMEN—What are you doing *personally* to advance the cause of GOOD ROADS in Kansas? You, who travel over them more than any other class of citizens (unless it be the market gardener). Your interests should prompt you to give this more or less attention.

It is a self-evident fact that we cannot macadam *all* roads, without bankrupting the state, so let us try the next best plan, namely, "dragging" them, which, after all, costs less money and is far better for the horses' feet, though it requires more frequent attention than does the pavement.

A worthy example was set by Dr. J. C. McClintock, of this city, who built a road drag and kept in order a certain piece of dirt road connecting Christ's Hospital with pavements on either side. It

was visited by the members of the State Good Roads Association in 1906 when they met in Topeka, and was pronounced a splendid substitute for rock road for at least ten months of the year, and is within the reach of all.

Now, it is suggested in order to encourage the officers of the State Good Roads Association (a volunteer organization in which both officers and members pay their own expenses and work for nothing), that every physician in the state make a personal effort in their locality "*to drag or cause to be dragged*" some one mile of road from now until June next.

We are pleased to refer to Secretary Coburn's plan for building and operating a "drag," which is so simple that any farm-hand can understand it and build one; the total cost need not exceed three or four dollars, and labor at twenty-five to fifty cents per hour.

How many of you have delinquent bills which you would gladly have worked out in this way by your debtors at the rate of five dollars per mile per year? This is the price allowed to each township treasurer for the care of a mile of dirt road. By reference to the state law passed last January (House bill No. 42), you will note that each township treasurer is authorized by law to pay this amount to the farmer (or physician) who furnishes this "treatment" to the roads.

THE GOOD ROADS PROBLEM.

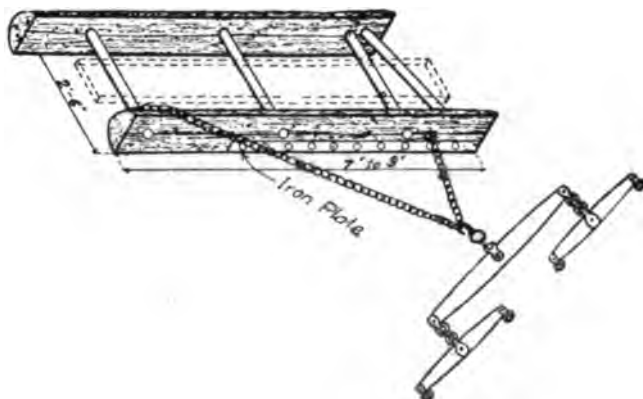
Rough and muddy roads cost the average farmer more than his taxes.

If each farmer will, at the proper times, do a little dragging on the road in front of his land, the State's bad roads will largely be made good roads.

Try it for a year; get your neighbors to do the same; see how inexpensive and simple it all is, and if it isn't one of the wisest investments you ever made.

This tells you how: The drag may be made of a log, say eight feet long and twelve inches through, split in the middle, or of two pieces of any substantial wood, two-by-eight inches, and the lighter the better. After the log is split, giving two flat-faced slabs, bore three two-inch holes in each slab or plank, as shown in the drawing; connect the slabs or planks, facing the same direction, with three stakes or rounded three-by-threes long enough to leave about three feet or less of space between the slabs after the connecting pieces have been driven into the holes. Two or three boards nailed together can be laid on these pieces, affording a loose platform for the driver to stand on. Use a chain or strong rope for attachment to the doubletree. Supposing the drag to face west, and assuming that a chain is used, fasten one end of the chain to or around the left-hand outside connecting brace, letting the chain pass over the top of the front slab. If attached to the face of the slab near the left-hand end, the chain would interfere with the movement of dirt toward that end of the drag. The drag is run at an angle of about forty-five degrees, so that dirt will be thrown toward one side. The other end of the chain can be inserted and fastened in a hole in the face of the front slab near where the right-hand connecting piece comes through, as shown in the illustration. Shoe about four feet of the bottom edge (right-hand side) of the front slab with a piece of iron or steel, about three inches wide and a half-inch thick, with one edge sharp or beveled.

A good drag will cost from almost nothing to \$2.50, depending on the material and construction, and last five or ten years. There is no patent on it, and anybody can make one.



Roads should be dragged ten or twelve times a year. The time is after each soaking rain or snow, so that the drag will leave a smooth surface. The dragging should be done when the soil is moist, but not sticky. When the frost is leaving the ground is an excellent time to begin.

F. D. COBURN.

How many will write that they have started a crusade in their town with a proposition to help "hold up the hands" of the State Good Roads Association?

Earnestly yours,

CLARENCE D. SKINNER,

Retiring Secretary State Good Roads Association.

Embalmed or Preserved Meat Products.

The passage of House bill No. 51 by both branches of the legislature places upon the statute-books a much needed law. In effect, this bill prohibits the use of embalming preparations in all meat products. The law reads as follows:

AN ACT prohibiting the manufacture, sale, keeping or offering for sale certain adulterated foods, and supplemental to chapter 266 of the Session Laws of 1907.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. The use of sulfites, any preparation containing sulfur dioxide, or any secret preparation the ingredients of which are unknown, in the manufacture or preparation of meat products, and the manufacture, selling, keeping or offering for sale of any meat products containing sulfites, sulfur dioxide, or the ingredients of any secret preparation, is hereby prohibited, and said meat products are hereby declared to be adulterated within the meaning of the provisions of chapter 266 of the Session Laws of 1907, and the manufacture, sale, keeping or offering for sale of any such meat product shall subject the offender to the penalties prescribed in said chapter 266 of the Session Laws of 1907 relating to adulterated foods.

SEC. 2. This act shall take effect and be in force from and after its publication in the official state paper.

THE JOY OF LIVING.

In a Topeka home the other night four persons—two men and two girls—were discussing the eternal problems of life. The question of the relative importance of marrying well, in so far as the financial aspect of the matter is concerned, passed in review. "I make no bones of it," said one of the girls, "I am crazy about money. I would gladly give twenty years of life just to be rich for the balance of my days." One man agreed that money was the thing. The other man and the other girl dissented. Whereat I am moved to set down here some of my own conclusions. I have long believed—in later years I have become convinced—that money and position are the least important things in the scheme of life. Love and work are the only important factors in happiness. Given something human to love and care for—a wife, a little child, a sister or brother—and given work which is congenial and to which he gives his best thought and his best efforts, and no man can escape happiness. Joy in his work is a man's best asset. To love some human being is his finest inheritance. And if he has these two essentials he really needs nothing else. For no matter how humble his place in the world, nor how closely he must cut and cover to make ends meet, he will be happy. And if there is anything else in this world worth striving for I have never discovered it. I do not undervalue either money or position. Personally, I should like to have both. Each is distinctly worth while, and each affords much gratification and satisfaction. As subsidiary aids to the joy of living, both are admirable. But neither will stand alone. The man or woman who wagers his chance of happiness on either has lost his bet with himself before the flag falls.

DODD GASTON, in the *Topeka Capital*.

BULLETIN

OF THE

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No. 3.

MARCH, 1908.

Vol. IV.

A false balance is an abomination to the Lord, but a just weight
is his delight. Prov. xi, 1.

It is the duty of every man to pull his own weight.— *Theodore
Roosevelt.*

“No rogue e'er felt the halter draw with good opinion of the law.”

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VITAL STATISTICS

Reported to the Kansas Board of Health for February, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|------------------------------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|---------|------------|---------|------------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| The State...total, February, 1907.... | 90 100 | 88 88 | 54 51 | 11 14 | 108 148 | 12 20 | 190 113 | 5 8 | 629 168 | 0 0 | 385 868 | 2 7 |
| Allen | 1 | 1 | 2 | 0 | 0 | 0 | 12 | 1 | 28 | 0 | 5 | 0 |
| *Anderson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Barber | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Barton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Bourbon | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Brown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| Butler | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 25 | 0 |
| Chase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Chautauqua | | | | | | | | | | | | |
| Cherokee | 6 | 6 | 0 | 0 | 6 | 1 | 5 | 0 | 24 | 0 | 4 | 0 |
| *Cheyenne | | | | | | | | | | | | |
| †Clark | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Clay | | | | | | | | | | | | |
| Cloud | 3 | 3 | 0 | 0 | 6 | 1 | 6 | 1 | 29 | 0 | 22 | 0 |
| Coffey | | | | | | | | | | | | |
| †Comanche | 2 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Cowley | 4 | 4 | 1 | 1 | 3 | 3 | 0 | 0 | 2 | 0 | 5 | 0 |
| Crawford | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Decatur | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickinson | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Douglas | 5 | 0 | 2 | 0 | 4 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| Edwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Elk | | | | | | | | | | | | |
| Ellis | 1 | 0 | 0 | 0 | 1 | 0 | 9 | 0 | 5 | 0 | 0 | 0 |
| Ellsworth | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Finney | | | | | | | | | | | | |
| Ford | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 36 | 0 |
| Franklin | 2 | 2 | 0 | 0 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 0 |
| *Geary | | | | | | | | | | | | |
| Gove | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Graham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 |
| †Grant | | | | | | | | | | | | |
| Gray | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Grealey | | | | | | | | | | | | |
| Greenwood | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 8 | 0 | 0 | 0 |
| Hamilton | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| *Harper | | | | | | | | | | | | |
| Harvey | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 |
| †Haskell | | | | | | | | | | | | |
| Hodgeman | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Jefferson | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Jewell | | | | | | | | | | | | |
| Johnson | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kearny | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Kingman | | | | | | | | | | | | |
| †Kiowa | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 4 | 0 |
| Labette | | | | | | | | | | | | |
| †Lane | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Leavenworth | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 0 |
| Lincoln | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Linn | | | | | | | | | | | | |
| *Logan | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 |
| Lyon | | | | | | | | | | | | |
| †Marion | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 28 | 0 |
| Marshall | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| McPherson | | | | | | | | | | | | |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Meade..... | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Miami..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Mitchell..... | 1 | 1 | 3 | 1 | 2 | 0 | 6 | 0 | 8 | 0 | 0 | 0 |
| Montgomery..... | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Morris..... | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| † Morton..... | 4 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 7 | 0 | 2 | 1 |
| Nemaha..... | 2 | 2 | 0 | 0 | 0 | 0 | 10 | 0 | 16 | 0 | 0 | 0 |
| Neosho..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 3 | 0 |
| * Osborne..... | | | | | | | | | | | | |
| * Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Phillips..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Pottawatomie..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| * Rawlins..... | | | | | | | | | | | | |
| Reno..... | 0 | 0 | 1 | 0 | 2 | 0 | 4 | 0 | 8 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 0 | 0 | 2 | 0 | 8 | 0 | 51 | 0 | 0 | 0 |
| * Rice..... | | | | | | | | | | | | |
| * Riley..... | | | | | | | | | | | | |
| Rooks..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 9 | 3 | 12 | 0 | 0 | 0 | 200 | 0 |
| † Russell..... | | | | | | | | | | | | |
| Saline..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 33 | 0 | 0 | 0 |
| Scott..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 |
| Sedgwick..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 |
| Seward..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| Shawnee..... | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 1 | 1 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| † Sherman..... | | | | | | | | | | | | |
| * Smith..... | | | | | | | | | | | | |
| Stafford..... | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| † Stanton..... | | | | | | | | | | | | |
| † Stevens..... | | | | | | | | | | | | |
| Sumner..... | 2 | 2 | 1 | 0 | 6 | 1 | 4 | 0 | 20 | 0 | 8 | 1 |
| Thomas..... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Trego..... | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 0 | 0 | 0 | 0 |
| Wabunsee..... | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 44 | 0 | 0 | 0 |
| Wallace..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington..... | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 21 | 0 | 0 | 0 |
| Wichita..... | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 6 | 0 |
| * Wilson..... | | | | | | | | | | | | |
| Woodson..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Wyandotte..... | | | | | | | | | | | | |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 61 | 0 | 0 | 0 |
| Coffeyville..... | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 9 | 0 | 2 | 0 |
| Kansas City..... | 15 | 15 | 23 | 4 | 5 | 0 | 4 | 0 | 37 | 0 | 1 | 0 |
| Leavenworth..... | 1 | 1 | 9 | 2 | 6 | 0 | 0 | 0 | 5 | 0 | 1 | 0 |
| Parsons..... | 5 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 10 | 0 |
| Topeka..... | 2 | 2 | 1 | 0 | 14 | 0 | 15 | 0 | 3 | 0 | 4 | 0 |
| Wichita..... | 2 | 2 | 1 | 0 | 8 | 1 | 2 | 0 | 28 | 0 | 2 | 0 |
| State Institutions. | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

*No report.

†No contagious diseases in county.

‡No health officer.

The tubercular dairy cow is a menace to public health, and should therefore be eliminated from the dairy herds.

FOOD ANALYSES No. XIII.

By J. T. WILLARD, Food Analyst for the Board.

MANHATTAN, KAN., March 16, 1908.

The following reports are upon materials examined since December 19. A number of others are still under investigation. The samples of milk and cream are grouped together in one table. Preservatives were not detected in any of them.

MILK.

| No. | DEALER. | Place. | Fat. | |
|---------|-------------------------------|-------------------|------|----------|
| 5140.. | Cremerie Restaurant..... | Topeka..... | 6.05 | Passed. |
| 5141.. | McFarland Restaurant..... | .. | 3.65 | .. |
| 5142.. | Burge Dining Hall..... | .. | 3.85 | .. |
| 5143.. | Puritan Restaurant..... | .. | 4.65 | .. |
| 5144.. | Central Hotel and Cafe..... | .. | 3.25 | .. |
| 5145.. | Pure Food Restaurant..... | .. | 6.65 | .. |
| 5146.. | People's Cafe..... | .. | 3.25 | .. |
| 5147.. | Arcade Cafe..... | .. | 3.80 | .. |
| 5148.. | Dick Johnson's Cafe..... | .. | 3.15 | Illegal. |
| 5149.. | Subway Cafe..... | .. | 3.10 | .. |
| 5150.. | Peter Heinz Milk Depot..... | .. | 3.35 | Passed. |
| 5152.. | Highland Park Dairy..... | .. | 4.55 | .. |
| 5153.. | W. H. Kistler..... | North Topeka..... | 4.25 | .. |
| 5154.. | W. H. Bowman..... | .. | 4.70 | .. |
| 5155.. | Scott Bros..... | Topeka..... | 4.25 | .. |
| 5156.. | College Hill Dairy..... | .. | 5.25 | .. |
| 5158.. | Avondale Dairy..... | .. | 3.95 | .. |
| 5159.. | R. E. Jones Dairy..... | South Topeka..... | 3.65 | .. |
| 5160.. | J. H. Isrial Dairy..... | Topeka..... | 3.85 | .. |
| 5161.. | F. Holford..... | North Topeka..... | 3.85 | .. |
| 5162.. | Dudley Farm Dairy..... | Topeka..... | 4.15 | .. |
| 5163.. | Bonnarnitz Dairy..... | North Topeka..... | 4.15 | .. |
| 5164.. | Clover Dale Dairy..... | Topeka..... | 3.55 | .. |
| 5165.. | Moyer Bros. Dairy..... | North Topeka..... | 4.95 | .. |
| 5166.. | Topeka Pure Milk Company..... | Topeka..... | 3.65 | .. |
| 5167.. | James Suggs' Dairy..... | .. | 4.05 | .. |
| 5169.. | Clover Hill Dairy..... | .. | 4.15 | .. |
| 5170.. | Con Chumas' Restaurant..... | .. | 3.55 | .. |
| 5171.. | Capitol Cafe..... | .. | 5.20 | .. |
| 5172.. | American Bakery..... | .. | 3.20 | Illegal. |
| K5162.. | Packard Milk Depot..... | .. | 5.15 | Passed. |
| K5158.. | Wilson's Dairy..... | .. | 6.70 | .. |
| K5154.. | L. A. Eddy..... | .. | 3.60 | .. |
| K5155.. | F. Sadlemire..... | .. | 3.55 | .. |
| K5156.. | J. F. Hughes..... | .. | 2.90 | Illegal. |
| K5157.. | F. B. Crocker..... | .. | 3.55 | Passed. |
| K5158.. | L. Luenburger..... | .. | 3.45 | .. |
| K5159.. | O. B. Eddy..... | .. | 3.30 | .. |
| K5160.. | R. Haynes..... | .. | 3.15 | Illegal. |
| K5161.. | E. Strabb..... | .. | 5.30 | Passed. |
| K5162.. | Thomas Allen..... | .. | 3.55 | .. |
| K5163.. | O'Brien Dairy..... | .. | 3.75 | .. |
| 5234.. | C. J. Gardner..... | De Soto..... | 4.70 | .. |
| 5235.. | J. S. Buckingham..... | .. | 3.75 | .. |
| 5236.. | Wirt French..... | .. | 3.85 | .. |
| 5237.. | E. S. Miller..... | .. | 3.35 | .. |
| 5238.. | C. H. Stratton..... | .. | 3.85 | .. |
| 5239.. | Geo. Sparks..... | .. | 2.25 | .. |
| 5240.. | B. French..... | .. | 3.45 | .. |
| 5241.. | J. F. Sheldon..... | .. | 4.30 | .. |
| 5242.. | A. J. Clark..... | .. | 3.65 | .. |
| 5243.. | Russell Ward..... | .. | 4.00 | .. |
| 5244.. | G. L. Reed..... | .. | 3.75 | .. |
| 5245.. | Chas. Jewett..... | .. | 3.50 | .. |
| 5246.. | A. J. Oudekirk..... | .. | 3.65 | .. |
| 5247.. | Robert Ballance..... | .. | 3.50 | .. |
| 5248.. | J. H. Gordon..... | .. | 3.38 | .. |

MILK—CONCLUDED.

| No. | DEALER. | Place. | Fat. | |
|------|----------------------------------------------|------------------------|------|----------|
| 5249 | Milo Gray | De Soto | 2.95 | Illegal. |
| 5250 | Frank Ellis | " | 3.30 | Passed. |
| 5251 | W. H. Jewett | " | 3.55 | " |
| 6013 | Dining Car No. 309 between Topeka and Ellia. | Union Pacific railway. | 3.78 | " |
| 6015 | M. Bodley Dairy | Kansas City | 3.25 | " |
| 6016 | Chinnery & Booth | " | 3.60 | " |
| 6017 | H. Hanroin Dairy | " | 4.00 | " |
| 6018 | J. S. Kerr | " | 3.25 | " |
| 6019 | Fred Wandell | " | 3.45 | " |
| 6020 | J. A. Garner | " | 2.80 | Illegal. |
| 6021 | J. W. Henry | " | 3.15 | " |
| 6022 | Isaac Kosovits | " | 3.15 | " |
| 6023 | A. B. Smith | " | 3.30 | Passed. |
| 6024 | G. W. Sargent | " | 3.15 | Illegal. |
| 6025 | G. W. Orr | " | 3.25 | Passed. |
| 6026 | W. S. Ballard | " | 2.75 | Illegal. |
| 6027 | DeCoursey Dairy | " | 3.25 | Passed. |
| 6028 | P. Mendenhall | " | 3.65 | " |
| 6029 | Burnard Bros. | " | 3.50 | " |
| 6030 | J. O. Donnell | " | 3.40 | " |
| 6031 | A. Jones | " | 4.25 | " |
| 6032 | A. F. Briggs | " | 3.60 | " |
| 6033 | F. C. Rohrbach | " | 3.25 | " |
| 6034 | Robinson & Son | " | 3.55 | " |
| 6035 | Geo. Frederick | " | 2.85 | Illegal. |
| 6036 | F. A. Caduff | Argentine | 3.25 | Passed. |
| 6037 | W. Hampton | Rosedale | 3.40 | " |
| 6038 | F. O. Nordwall | " | 4.40 | " |
| 6039 | J. Lloyd | " | 3.60 | " |
| 6040 | Roy Petrie | " | 4.85 | " |
| 6041 | L. Kundsén | " | 3.40 | " |
| 6042 | K. Klausén | " | 3.75 | " |
| 7045 | J. N. Jurgens | Wichita | 2.75 | Illegal. |
| 7046 | F. Biering | " | 3.70 | Passed. |
| 7047 | J. R. Russell | " | 4.40 | " |
| 7048 | Hubbard & Gould | " | 3.25 | " |
| 7049 | Drollinger Bros. | " | 3.75 | " |
| 7050 | B. W. McGinnis | " | 4.20 | " |
| 7051 | L. R. Killion | " | 3.28 | " |
| 7052 | Ed. Rosell | " | 4.15 | " |
| 7104 | Heuser & Son | Pittsburg | 4.05 | " |
| 7106 | L. Kidder & Son | " | 4.00 | " |
| 7108 | E. March | " | 3.80 | " |
| 7109 | H. D. Hatton | " | 3.15 | Illegal. |
| 7110 | O. J. Whybark | " | 4.25 | Passed. |
| 7111 | Geo. Radell | " | 4.05 | " |
| 7112 | J. E. Hongardy | " | 4.00 | " |
| 7113 | John Grotheer | " | 3.35 | " |
| 7114 | John Grotheer | " | 4.55 | " |

CREAM.

| | | | | |
|------|----------------------------------------|---------|-------|---------|
| 5151 | Peter Heinz Milk Depot | Topeka | 25.20 | Passed. |
| 5157 | Dudley Farm Dairy | " | 24.30 | " |
| 5168 | James S. Zim | " | 20.70 | " |
| 5173 | R. E. Jones | " | 18.90 | " |
| 7054 | Bissant Ice Cream and Creamery Company | Wichita | 22.50 | " |

In the case of the later samples, where a deficiency of fat was observed, determinations of total solids were made, with the results stated below.

No. K5156. With 2.9 per cent. of fat this milk contained 12.08 per cent. of total solids, of which 9.18 per cent. were not fat. Apparently a portion of the cream had been removed from this milk.

No. K5160. With 3.15 per cent. of fat and 11.63 per cent. of total solids, making 8.48 per cent. of solids not fat. The standards

require not less than 11.75 per cent. of total solids and 8.5 per cent. of solids not fat. The results would lead to the supposition that the milk had been watered, thus reducing both the fat and the total solids.

No. 5249. This milk, with 2.95 per cent. of fat, contained 12.18 per cent. of total solids, making 9.23 per cent. of solids not fat. This milk had apparently been skimmed somewhat.

No. 6020. Milk containing 2.8 per cent. of fat; total solids, 9.57 per cent.; solids not fat, 6.77 per cent. This milk had been watered, and probably skimmed also.

No. 6021. Fat present, 3.15 per cent.; total solids, 11.03 per cent.; solids not fat, 7.88 per cent. This milk seemed to have been watered, and possibly skimmed also.

No. 6022. Milk containing 3.15 per cent. of fat, 12.27 per cent. of total solids, and 9.12 per cent. of solids not fat. This had probably been skimmed to a certain extent.

No. 6024. This milk, with 3.15 per cent. of fat, 12.36 per cent. of total solids, and 9.21 per cent. of solids not fat, had apparently been skimmed somewhat.

No. 6026. Fat, 2.75 per cent.; total solids, 11.52 per cent.; solids not fat, 8.77 per cent. This milk is deficient in total solids as well as fat, though the solids not fat do not fall below the minimum standard. The milk had apparently been watered, and very likely skimmed also.

No. 6035. Milk containing 2.85 per cent. of fat, 11.35 per cent. of total solids, and hence 8.5 per cent. of solids not fat. Deficient in total solids and fat and exactly at the minimum standard for solids not fat. Had apparently been watered, and perhaps skimmed also.

No. 7109. Fat, 3.15 per cent.; total solids, 12.07 per cent.; solids not fat, 8.92 per cent. This milk seemed to have been skimmed to a certain extent.

In respect to milk and cream it would be well at this point to recall the standards required by the Kansas law, remembering that these standards represent minimum amounts that may be present in milk and cream to be legally sold, and not averages or standards of excellence. A milk which approaches the minimum standard is therefore an inferior article, and if from a herd has probably been tampered with. Milk from individual cows is more apt to show extremes of composition than is the mixed milk of a herd. The average composition of many thousand samples of market milk has been found to be about 3.8 per cent. of fat, and 12.75 per cent. of

total solids, making 8.95 per cent. of solids not fat. The watering of milk reduces the percentage of fat and of solids not fat. The removal of cream reduces the percentage of fat but has little effect upon the solids not fat. It will be noted that the Kansas City (Kan.), samples in several instances were exactly at the minimum standard of 3.25 per cent. of fat. There were but two samples in which the percentage of fat reached that of the average for milk. The results upon the samples as a whole indicate a very poor milk-supply for that city if the samples submitted are a fair index of the supply.

Considerable care is necessary in order to sell milk so that all patrons shall be treated alike. The facility with which the fat rises makes the danger great that the milk sold shall be variable in quality unless it is bottled immediately after thorough mixing. Some of the low results observable may be traceable to this cause, but that is a condition which should be avoided by dealers as much as is actual adulteration or intentional skimming.

BUTTER AND CHEESE.

No. 5210. Creamery Butter, Pa Jones brand. Manufactured by the Junction City Creamery Company, Junction City, Kan. Retailer, O. Wm. Holt, Manhattan, Kan. Gross weight, including wrapping, 15.4 ounces; net weight, 14.7 ounces. No statement as to weight made by manufacturer. Percentage of water, 10.7; fat, 86.91. Passed.

No. 7053. Creamery Butter, Peerless brand. Manufactured by the Wichita Creamery Company, Wichita, Kan. Retailer, Geo. M. Rice, Wichita, Kan. Gross weight of print, with wrappings, 16.07 ounces; net weight of butter, 14.73 ounces. Percentage of water, 11.24; fat, 82.35. No claim made by manufacturer in respect to weight. Passed.

No. 5226. Cheese. Jobber, Lee Mercantile Company, Salina, Kan. Retailer, Spot Cash Grocery, Manhattan, Kan. This was tested only with reference to butter-fat and was found to contain 41.25 per cent. The state law requires not less than 35 per cent. of butter-fat to be present in whole-milk or full-cream cheese. It is obvious that the percentage of fat exhibited by a sample of cheese will depend largely upon the amount of water which it contains, hence the standard as formulated by the federal authorities and promulgated by the secretary of agriculture is preferable in that it is based upon the water-free substance and requires that at least 50 per cent. of the water-free substance shall be fat. The percentage of water in this cheese was 26.05; hence the water-free

substance was 73.95 per cent., and the fat, being 41.25 per cent., was 55.8 per cent. of the water-free substance. Passed.

MEAT, FISH, OYSTERS, ETC.

No. 7071. Potted Ham, Rex brand. Manufactured by the Cudahy Packing Company, Omaha, Neb. Retailer, Coe & Co., Coats, Kan. The sample was marked "U. S. Inspected." It was in good physical condition, had the taste and odor of ham, and was highly spiced. It gave no reaction for boric acid, borates, benzoates or salicylates. The net weight of the contents was 3.53 ounces. It contained 43.2 per cent. of water, 2.09 per cent. of ash and 0.54 per cent. of starch. No test for glycogen was obtained. Passed.

No. 5174. Smoked Halibut. Jobber, Haase & Sons, St. Louis, Mo. Retailer, Allingham & Beattie, Manhattan, Kan. Sample was in good condition and free from preservatives. Passed.

No. 5175. Salted Codfish. Jobber, Haase & Sons, St. Louis, Mo. Retailer, Allingham & Beattie, Manhattan, Kan. Sample in good condition and free from preservatives. Passed.

No. 5177. Sardines in Salad Oil. Manufactured by Edward T. Russell, Boston, Mass. Retailer, Allingham & Beattie, Manhattan, Kan. Cottonseed-oil present. The term "salad oil" should not be used unless olive-oil is meant. The manufacturer explains that this sample is in an old carton; the cartons now being used show that the sardine are put up in cottonseed-oil.

No. 7092. Bulk Oysters, Extra Standard. From Chas. Newbert & Co., Baltimore, Md. Retailer, F. Bachman, Fort Scott, Kan. Weight of liquid, 8.28 oz.; meats, 10.12 oz. The oysters were large, but had the appearance of having absorbed water. The meats contained 11.52 per cent. of solids, the liquid 3.2 per cent. of solids, and the sample as a whole contained 7.77 per cent. of solids. Illegal.

No. 7091. Bulk Oysters, Extra Select. From Chas. Newbert & Co., Baltimore, Md. Retailer, F. Bachman, Fort Scott, Kan. Weight of liquid, 5.82 oz.; weight of meats, 7.3 oz. The meats contained 12.79 per cent. of solids, the liquid 3.56 per cent., and the sample as a whole 6.86 per cent. of total solids. Illegal.

No. 7096. Bulk Oysters. From Chas. Newbert & Co., Baltimore, Md. Retailer, F. Bachman, Fort Scott, Kan. Weight of liquid, 5.47 oz., weight of meats, 11.69 oz. Per cent. of total solids in liquid, 4.73; in the meats, 13.65, and in the sample as a whole, 10.81. Sample was taken by retailer, the other two samples being taken by the inspector. Passed.

No. 7068. Beef Extract. Manufactured by Armour & Company, Chicago, Ill., and sold by J. J. Pearson, Parsons, Kan. The prepara-

tion was found to be free from borates, sulfites, benzoates and salicylates. Passed.

VEGETABLES AND CONDIMENTS.

No. 5227. Baked Beans with Tomato Sauce, Monarch brand. Manufactured by Reid, Murdock & Co., Chicago, Ill. Retailer, E. B. Purcell Trading Company, Manhattan, Kan. Sample was found free from preservatives. Passed.

No. 5176. Pork and Beans with Tomato Sauce. Manufactured by Libby, McNeill & Libby, Chicago, Ill. Sample in good condition and free from preservatives. Passed.

No. 5197. Sugar Corn, Liberty brand. Manufactured by the Independence Canning Company, Independence, Iowa. Retailer, O. Wm. Holt, Manhattan, Kan. Sample in good condition, with small and medium sized grains. No borates, benzoates, salicylates or saccharin were detected. Passed.

No. 5209. Royal Peanut Butter. Manufactured by the Cleveland Health Food Company, Cleveland, Ohio. Retailer, O. Wm. Holt, Manhattan, Kan. This was tested for sulfites, borates, and benzoates, and none were found. Passed.

No. 5203. Horse Radish. Manufactured by the U. S. Horse Radish Company, Saginaw, Mich. Retailer, O. Wm. Holt, Manhattan, Kan. This was tested for salicylates and benzoates, with no result. Passed.

No. 5188. Libby's Sweet Gherkins. Manufactured by Libby, McNeill & Libby, Chicago, Ill. Pickles were sound and crisp, but produced the effect of an astringent in the mouth. Borates, salicylates and copper were absent, but the pickles contained alum.

No. 5189. Libby's Sour Gherkins. Manufacturer, Libby, McNeill & Libby, Chicago, Ill. Retailer, O. Wm. Holt, Manhattan, Kan. These pickles gave a somewhat astringent effect, and alum was found to be present. Copper, benzoates and salicylates absent.

No. 5231. Sour Onions, Victorex brand. Manufactured for the Parkhurst-Davis Company, Topeka, Kan. Retailer, Frank Eakin, Square Deal Store, Manhattan, Kan. The onions were very white and gave a good test for sulfites. Alum was also detected. Benzoates and salicylates absent. Illegal.

No. 5217. Compound Mustard. Manufactured by Jewett, Sherman & Co., Milwaukee, Wis. Retailer, Spot Cash Grocery, Manhattan, Kan. According to the label "this compound is composed of the following ingredients and none other: Mustard seed 0.10 per cent., mustard bran 0.07 per cent., vinegar 77 per cent., spices and turmeric 0.02 per cent, salt 0.04 per cent." These figures are evi-

dently in part erroneously stated, and should be whole per cents. instead of hundredths, in all cases. Tests for salicylates and benzoates showed that the samples contained a benzoate. Illegal, in that presence of benzoates is not stated.

No. 5230. Salad Mustard, Victorex brand. Manufactured by the Parkhurst-Davis Company, Topeka, Kan. Retailer, Frank Eakin, Square Deal Store, Manhattan, Kan. No salicylates or benzoates were found, but turmeric was present. Passed.

No. 5178. Vienna Sausage with Tomato Sauce. Manufactured by Libby, McNeill & Libby, Chicago, Ill. Retailer, Allingham & Beattie, Manhattan, Kan. The label claims the presence of beef, pork, flour, tomatoes, and spices. The sample was in good physical condition, and no preservatives were found. Passed as to composition. The use of the name *Vienna* is questionable. *Vienna style* would be free from the possibility of misleading.

No. 5229. Tomato Ketchup, Blue Label brand. Manufactured by the Curtice Bros. Company, Rochester, N. Y. Retailer, Frank Eakin, Square Deal Store, Manhattan, Kan. Sample contained sodium benzoate. Illegal, in that presence of benzoate is not stated.

No. 5180. India Relish. Manufactured by the H. T. Heinz Company, Pittsburg, Pa. Retailer, Allingham & Beattie, Manhattan, Kan. No preservatives were detected in it. The label reads: "Contains no added preservative or added coloring matter or any substances injurious to health." Passed.

No. 5219. Yorkshire Relish. Manufactured by the E. H. Blair Coffee and Tea Company, Kansas City, Mo. Retailer, Spot Cash Grocery, Manhattan, Kan. Benzoates and salicylates not detected. The relish is a dark-colored, highly-spiced and peppered sauce. Passed.

No. 5186. American Club Sauce. Manufactured by the Wright-Smith Manufacturing Company, St. Louis, Mo. Retailer, O. Wm. Holt, Manhattan, Kan. This was found free from salicylates and benzoates. Passed.

No. 5228. Yacht Club Salad Dressing. Manufactured by Fildesley & Co., Chicago, Ill. Retailer, E. B. Purcell Trading Company, Manhattan, Kan. The sample contained a benzoate and turmeric. Illegal. Label should declare presence of the preservative.

No. 5232. Snider's Salad Dressing. Manufactured by the T. A. Snider Preserve Company, Cincinnati, O. Retailer, Frank Eakin, Square Deal Store, Manhattan, Kan. Salicylates and benzoates were not detected.

MISCELLANEOUS.

No. 12132. No. 6 Preservative. Gave the reaction for salicylates and is probably the sodium salt. It also contained coloring matter and an odoriferous substance.

No. 12133. Coloring for Sausage Skins, "Zulu Brown." Manufactured by Wolf, Sayer & Heller, Chicago, Ill. The article is of a dull red color with a taste like coffee and salt. A portion is soluble in water, forming a bright red solution. The insoluble residue has the appearance of spent coffee grounds. The insoluble portion contains 0.3 per cent. of ash. The coloring matter is a coal-tar dye. Sulfites and borates are absent. No physiological tests were made with the dye and its wholesomeness is not passed upon.

CEREAL FOODS.

No. 12129. Compound Buckwheat Flour. Manufactured by the Parkhurst-Davis Company, Topeka, Kan. Buckwheat-starch, wheat-starch and corn-starch were recognizable by means of the microscope. Sample was perhaps half buckwheat. Passed.

No. 12132. Pure Buckwheat Flour. Manufactured by the Larrowe Milling Company, Cohocton, N. Y. Retailer, E. B. Purcell Trading Company, Manhattan, Kan. A microscopical examination did not disclose the presence of any starch other than that of buckwheat. Passed.

No. 5224. F S Wheat Farina. Manufactured by the American Cereal Company, Chicago, Ill. Retailer, Spot Cash Grocery, Manhattan, Kan. Marked 1 lb. Gross weight of five packages: Minimum, 15.66 oz.; maximum, 15.93 oz.; average, 15.76 oz. Net weight: Minimum, 14.21 oz.; maximum, 14.80 oz.; average, 14.41 oz. Illegal as to weight, the gross weight being one-fourth oz. short of the weight marked on the package, which should mean net weight, and the net weight being 1.6 oz. short.

No. 5225. Little "J" Rolled Oats. Manufactured by the Schumacher Cereal Company, Riverside, Iowa. Retailer, Spot Cash Grocery, Manhattan, Kan. Marked 2 lbs. Gross weight of five packages: minimum, 31.75 oz.; maximum, 31.90 oz.; average, 31.82 oz. Net weight: minimum, 29.85 oz.; maximum, 30.35 oz.; average, 30.06 oz. Illegal as to weight, the average net weight being two ounces short.

It will be seen that the two brands of cereal foods examined are short in weight. The packages were intact and there had been no loss by leakage. There is of course an opportunity for some variation in weight due to changes of atmospheric conditions, but these would not be sufficient to account for the shortage. The weights were probably intended to be gross in all cases, in which case the shortage would not be so marked.

DRUG ANALYSES No. X.

By L. E. SAYRE, Director of Drug Analysis, assisted by A. ZIEFLE, Analyst.

LAWRENCE, KAN., March 19, 1908.

We herewith submit a report for the BULLETIN of the State Board of Health, which embraces the analyses of the preparations indicated, sent to the laboratory by the drug inspectors. It will be seen that the burden of this report deals with spirits of camphor as sold in the state. Although some of these samples are somewhat below the standard of 10 per cent., this is not to be considered as an indication that the samples were intentionally adulterated. Slight errors could easily have been incurred by an error in the weighing, or the method of weighing, or in the absolute camphor content of the camphor employed; a certain per cent. of moisture being contained in the sample.

Out of 143 analyses made but 58 were up to the standard required in the United States Pharmacopœia. Out of this number there were 16 containing less than 5 per cent of camphor, 10 per cent. being the standard of strength required under the law. As might be suspected, these illegal spirits of camphor are, most of them, loaded with water so that the alcoholic content required under the law is also deficient.

In the subjoined report it will be noted that there are two terms used, namely, "illegal" and "substandard." Those samples that yield over 11 per cent. and those below 5 per cent. of camphor are stated as illegal. Those between 8 and 5 per cent. are recorded as substandard. These terms have been employed somewhat arbitrarily and, therefore, we have considered it best to explain them. Those preparations which have been found to be illegal and substandard will be taken up in the future as will be directed by the Board of Health. The chief inspector may possibly order a second analysis, and hence the figures are reserved pending his further instructions.

See table on next two pages.

REPORT ON EXAMINATION OF "ORPHAN" PATENT MEDICINES.

No. 1583. Burk's White Pine Balsam. Burk's White Pine Balsam Company, Chicago, Ill. Misbranded. Claims to be a cure for all throat, chest and lung diseases. It contains syrup, syrup of wild cherry, tar and chloroform.

No. 1615. Sweet Spirits of Nitre. Climax Chemical Works, Chicago, Ill. Contains 0.2 per cent. of ethyl nitrite. Is intensely acid and contains an excess of water. Illegal.

REPORT ON SPIRITS OF CAMPHOR.

| Lab. No. | CITY. | Per cent. camphor. | Per cent. water. | Remarks. |
|----------|-------------|--------------------|------------------|----------------------------------|
| 1619 | Topeka | | | Substandard. |
| 1662 | " | | | |
| 1663 | " | | | Illegal. |
| 1664 | " | | | Substandard. |
| 1665 | " | 8.8 | | |
| 1667 | " | 8.8 | | |
| 1669 | " | 8.8 | | |
| 1670 | " | | | Substandard. |
| 1671 | " | | | " |
| 1672 | " | | | |
| 1674 | " | 8.8 | | |
| 1675 | " | 10.0 | | |
| 1676 | " | | | Substandard. |
| 1677 | " | | | |
| 1678 | " | | | Illegal. |
| 1679 | " | | | Substandard. |
| 1680 | " | | | |
| 1681 | " | 10.0 | | |
| 1682 | " | 8.8 | | |
| 1683 | " | | | Substandard. |
| 1684 | " | | | |
| 1685 | " | 8.8 | | |
| 1686 | " | 8.8 | 6.0 | |
| 1687 | " | 8.8 | 2.0 | |
| 1688 | " | 10.0 | 5.8 | |
| 1689 | " | | | Illegal. |
| 1690 | " | | | Substandard. |
| 1691 | " | 8.0 | | Illegal. |
| 1692 | " | | | Substandard. |
| 1698 | " | | | |
| 1694 | " | 8.8 | 8.0 | |
| 1695 | " | | | Substandard. |
| 1696 | " | 10.0 | 4.0 | |
| 1697 | " | 8.8 | | |
| 1698 | " | | | Illegal. |
| 1699 | " | 10.0 | | |
| 1700 | " | 8.8 | 18.0 | |
| 1701 | " | 10.0 | | |
| 1702 | " | 10.0 | 4.0 | |
| 1703 | " | | | Illegal. |
| 1705 | " | | | Camphor could not be determined. |
| 1707 | " | 10.0 | | |
| 1708 | " | 8.8 | | |
| 1709 | " | 10.0 | | |
| 1710 | " | 8.8 | 2.0 | |
| 1712 | " | 10.0 | | |
| 1759 | Pittsburg | 10.0 | | |
| 1760 | Girard | | | Illegal. |
| 1761 | Pittsburg | 10.21 | | |
| 1762 | " | | | Substandard. |
| 1763 | " | 10.21 | | |
| 1764 | Walnut | | | Substandard. |
| 1765 | Girard | 10.21 | | |
| 1766 | Pittsburg | 10.0 | | |
| 1767 | Wehr City | 9.3 | 10.2 | |
| 1768 | " | | | Illegal. |
| 1769 | Pittsburg | | | Substandard. |
| 1770 | " | 10.4 | | |
| 1771 | " | | | Substandard. |
| 1772 | Girard | | | |
| 1773 | " | | | Camphor could not be determined. |
| 1774 | Pittsburg | 8.25 | | |
| 1775 | " | | | Substandard. |
| 1776 | Girard | 8.8 | 10.6 | |
| 1777 | Frontenac | | | Substandard. |
| 1778 | Harpster | 8.25 | 13.5 | |
| 1779 | Scammon | | | Substandard. |
| 1780 | Walnut | 10.0 | | |
| 1781 | Frontenac | | | Illegal. |
| 1784 | Ransomville | 10.21 | 14.2 | |
| 1788 | Burlington | 10.0 | | |
| 1789 | Gridley | 8.8 | | |
| 1790 | Emporia | 8.8 | | |
| 1792 | " | 8.8 | 15.0 | |
| 1793 | " | | | Substandard. |
| 1794 | " | 10.0 | | |
| 1797 | " | | | " |

REPORT ON SPIRITS OF CAMPHOR—CONCLUDED.

| Lab. No. | CITY. | Per cent. camphor. | Per cent. water. | Remarks. |
|----------|----------------------------|--------------------|------------------|-----------------------------|
| 1798 | Emporia | | | |
| 1799 | | 10.1 | | |
| 1803 | Gridley | 8.8 | | |
| 1806 | Le Roy | | | Substandard. |
| 1806 | Garnett | 10.0 | | |
| 1808 | " | | | Substandard. |
| 1809 | " | 10.0 | 18.2 | |
| 1818 | Mulberry | 10.1 | | |
| 1819 | Arcadia | 10.1 | | |
| 1820 | Radfield | 10.0 | | |
| 1821 | Uniontown | 8.8 | 11.8 | |
| 1822 | Brownston | | | Illegal. |
| 1823 | Fulton | | | Not enough to est. camphor. |
| 1824 | Fort Scott | 8.8 | | |
| 1825 | " | | | Substandard. |
| 1826 | " | 8.25 | | |
| 1827 | " | 10.4 | 8.69 | |
| 1828 | " | 10.0 | | |
| 1829 | " | 10.4 | | |
| 1830 | Devan | 10.0 | | |
| 1831 | Mapleton | | | Substandard. |
| 1832 | Fort Scott | | | |
| 1833 | | 10.0 | | |
| 1834 | Blue Mound | 10.0 | | |
| 1835 | Centerville | | | Illegal. |
| 1836 | | | | |
| 1837 | Parker | 10.1 | | |
| 1838 | | 10.0 | 1.5 | |
| 1839 | Mound City | | | Substandard. |
| 1840 | | | | |
| 1841 | Pleasanton | | | Illegal. |
| 1843 | | | | Substandard. |
| 1845 | Prescott | 10.1 | | Illegal. |
| 1847 | Pleasanton | | | |
| 1849 | La Cygne | 10.4 | | |
| 1851 | | | | Substandard. |
| 1854 | Dearing | | | |
| 1859 | Coffeyville | 8.8 | | |
| 1861 | | 10.0 | | |
| 1864 | Caney | 10.45 | | |
| 1874 | Elgin | 10.0 | 4.7 | |
| 1877 | Chautauqua | 10.0 | | |
| 1887 | Independence | 10.0 | | |
| 1890 | Coffeyville | 9.35 | | |
| 1892 | | | | Illegal. |
| 1900 | Sycamore | | | Substandard. |
| 1902 | Altoona | | | |
| 1904 | | 10.45 | 1.4 | |
| 1912 | Neodesha | | | Substandard. |
| 1913 | | | | |
| 1940 | Paola | | | |
| 1941 | " | | | |
| 1942 | " | | | |
| 1943 | " | 10.45 | | |
| 1944 | " | | | Substandard. |
| 1945 | " | | | |
| 1946 | Pomona | 11.1 | | |
| 1947 | Osawatimie | | | Substandard. |
| 1948 | " | 8.8 | | |
| 1949 | " | 8.8 | | |
| 1950 | State Hospital, Osawatimie | | | Substandard. |
| 1951 | Fontana | 11.0 | | |
| 1952 | Louisburg | 9.35 | | |
| 1956 | Arma | | | Illegal. |
| 1957 | " | 11.0 | | |
| 1958 | " | | | Illegal. |

NOTE.—Names of dealers will be published where second analysis shows product to be substandard or illegal.—A. J. C.

No. 1629. Haller's Sure Cure Cough Syrup. Haller's Proprietary Company, Blair, Neb. Contains syrup, squills and resinous substance.

No. 1630. Lockwood's Nerve and Bone Liniment. J. R. Lockwood, Ottawa, Kan. Contains about 33 per cent. of turpentine dissolved in mineral oil.

No. 1631. Reid's German Cough and Kidney Cure. The Sylvan Remedy Company, Peoria, Ill. Misbranded. Claims to be a cure for consumption and all diseases of the throat and lungs. It contains principally tar and syrup.

No. 1632. Genuine Kickapoo Cough Syrup. Haley & Bigelow, 521 Grand avenue, New Haven, Ct. Misbranded. Claims to be a cure for all diseases of the throat and lungs. Contains tar, ammonium chlorid and syrup.

No. 1636. Dr. Cunningham's Celebrated Lung Tonic. Geo. F. Brost, Indianapolis, Ind. This is an alcohol solution of acrid expectorant drugs, containing 24.3 per cent. of alcohol.

No. 1644. Extract of Jamaica Ginger. Grand Union Tea Company, Brooklyn, N. Y. Passed.

No. 1656. Cinnamon. Letts-Spencer Grocery Company, St. Joseph, Mo. The ash content is normal, but the oleoresin content is rather low. The sample also contains cassia buds.

No. 1657. Pepper. H. D. Lee Mercantile Company, Salina, Kan. The ash, ethereal extract and microscopical examination show that this spice conforms with the standard. Passed.

No. 1658. Ginger. H. D. Lee Mercantile Company, Salina, Kan. The ash content and the amount of ethereal extract, together with the microscopical examination, proves that this spice is acceptable. Passed.

No. 1659. Mustard. C. A. Murdock, Kansas City, Mo. Contains 5.7 per cent. of ash, low. The spice is free from foreign material. Passed.

No. 1660. Cloves. The Dolan Mercantile Company, Atchison, Kan. Ash is normal, but the volatile ethereal extract is quite low. The microscopical examination shows that the sample is mixed with allspice.

No. 1661. Phenol. Faxon, Gallagher, Kansas City, Mo. In a two-pound tin container. Passed.

No. 1666. Dilute Phosphoric Acid. G. A. Crampton, Topeka, Kan. Passed.

No. 1668. Lime Water. C. W. Cole, Topeka, Kan. Passed.

No. 1673. Spirits of Nitrous Ether. G. E. Smith, Topeka, Kan. Contains 0.6 of 1 per cent. of ethyl nitrite. Illegal.

No. 1704. Tincture of Capsicum. H. A. Witles, Topeka, Kan. Contains 76.7 per cent. of alcohol. Passed.

No. 1706. Lime Water. C. E. Joslin, Topeka, Kan. The sample was deficient in lime. Illegal.

No. 1711. Lime Water. G. P. Pierce, Topeka, Kan. Passed.

No. 1713. Rochester Brewery Company, Kansas City, Mo. (The sample was not labeled.) The preparation proved to be beer, containing 4.92 per cent. of alcohol.

No. 1714. Fleury's Wahoo Tonic. Fleury's Medicine Company, Springfield, Ill. The preparation is a solution of vegetable drugs containing carbonate of iron in suspension. Contained 15.19 per cent. of alcohol and 5 per cent. of total solids.

No. 1715. Alexander Sanders' Rheumatism and Malaria Cure. W. W. Alexander & Co., Akron, Ohio. Misbranded. Claims to be a cure for malaria, rheumatism, typhoid, and every acute disease. A muddy solution of intensely bitter taste, containing 1.4 per cent. of alcohol and 13 per cent. of total solids.

No. 1716. Warner's Log Cabin Scalpene. H. W. Warner & Co., Rochester, N. Y. The preparation is an old sample of bay rum, containing 45.5 per cent. of alcohol.

No. 1717. Warner's Log Cabin Hops and Buchu Remedy. H. W. Warner & Co., Rochester, N. Y. Contains 11.6 per cent. of alcohol. An alcoholic solution of very bitter vegetable drugs.

No. 1718. Warner's Log Cabin Diabetes Cure. H. W. Warner & Co., Rochester, N. Y. Misbranded. Claims to be a cure for diabetes, Bright's disease, and every disease of the kidneys and liver. An aromatic alcoholic solution of vegetable drugs, containing 15.5 per cent. of alcohol and 10.6 per cent. of total solids.

No. 1719. Peruvian Tonic. Dr. S. O. Himoe & Co., Lawrence, Kan. Misbranded. Claims to be a cure for dyspepsia, all liver complaints, and diseases of the blood, etc. An aromatic alcoholic solution, containing very bitter acrid vegetable drugs in solution. It contains 28.8 per cent. of alcohol and 3.5 per cent. of total solids.

No. 1720. Warner's Log Cabin Sarsaparilla. H. W. Warner & Co., Rochester, N. Y. Misbranded. Claims to be a cure for scrofula and every disease of the blood. It is an alcoholic solution of organic and inorganic drugs, and has the characteristic taste and odor of compound sarsaparilla. Contains 23.8 per cent. of alcohol and 14.3 per cent. of total solids.

No. 1722. Kidnegen. Lawrence and Martin, 111 Madison

street, Chicago, Ill. Misbranded. Claims to be a cure for all kidney and urinary diseases. An alcoholic solution of volatile terpene oils and drugs, containing 42.1 per cent. of alcohol and 14 per cent. of total solids.

No. 1723. Hops and Malt Bitters. The Hops and Malt Bitters Company, Detroit, Mich. Contained in a pint bottle. It is an almost tasteless solution, containing 16.75 per cent. of alcohol and 0.41 per cent. of total solids.

No. 1725. Warner's Log Cabin Extract. H. W. Warner & Co., Rochester, N. Y. An alcoholic solution of volatile oils, containing 62 per cent. of alcohol and 4.1 per cent. of total solids.

No. 1726. Brown's Extract of Sarsaparilla. Brown's Medicine and Manufacturing Company, Lawrence, Kan. Misbranded. Claims to be an infallible cure for all diseases of the blood. An alcoholic solution of bitter vegetable drugs and potassium iodid, containing 14.8 per cent. of alcohol and 11 per cent. of total solids.

No. 1727. Wood's Rheumatism Cure. S. C. Bradt & Son, Albany, N. Y. Misbranded. It is supposed to be a cure for all kinds of rheumatism. A solution of very pungent drugs, containing 37.9 per cent. of alcohol and 14 per cent. of total solids.

No. 1728. Ayers' Vita Nuova. H. H. Ayers, 54 Park Place, New York city. Misbranded. Supposed to be an absolute cure for mental exhaustion and other ailments, including the cure for the opium and alcohol habit. An aromatic solution, which has an odor suggesting hops, and containing 21.36 per cent. of alcohol and 12.2 per cent. of total solids.

No. 1730. Cherokee Blood Purifier. W. H. Hill, Fairport, N. Y. Misbranded. Claims to be a cure for all blood diseases. Contains 15.09 per cent. of alcohol and 0.38 per cent. of total solids.

No. 1731. Sanford's Nerve Tonic. Sanford's Chemical Company, Cincinnati, Ohio. Misbranded. Claims to be a complete cure for all nervous diseases. A dark-brown solution, containing sodium bicarbonate, oil of peppermint, and also vegetable drugs. Also contains 10.3 per cent. of alcohol.

No. 1752. Dr. Turner's Shaker Pain Cure. Shaker Medical Company, St. Louis, Mo. Misbranded. Claims to be a cure for nervous diseases, coughs, sprains, etc. An alcoholic solution of volatile oils, precipitated sassafras and ammonia, containing 64.5 per cent. of alcohol.

No. 1733. Walcott's Pain Paint. Chas. N. Crittenton, 115 Fulton St., New York. Misbranded. Claims to be a permanent cure

for all pains. A cloudy solution which contains oil of peppermint and some oil of mustard. Contains 26.77 per cent. of alcohol.

No. 1734. Dr. Jackson's Penetrating Oil Liniment. Collins Bros., St. Louis, Mo. Misbranded. Claims to be a cure for rheumatism, frost-bites, etc. The solution is a mixture of volatile oils dissolved in mineral oil.

No. 1735. Dr. Sawyer's Celebrated Oil Liniment. Dr. W. Sawyer, Utica, N. Y. An oily solution containing tar, turpentine, and other volatile, irritating oils.

No. 1738. Brown's Arnica Liniment. Brown's Medical and Manufacturing Company, Leavenworth, Kan. An oily solution consisting principally of turpentine.

No. 1739. Dr. McLean's Chill & Fever Cure. I. H. McLean Medical Company, St. Louis, Mo. Misbranded. Claims to cure any disease of a bilious or malarial nature. A dark-brown solution of very bitter drugs, containing 19.75 per cent. of alcohol and 26 per cent. total solids.

No. 1742. Dr. Sykes' New England Liver Tonic. C. R. Sykes, 169 East Madison street, Chicago, Ill. Misbranded. Claims to cure liver derangement, kidney and bladder trouble, etc. It is an alcoholic solution of bitter drugs, aromatized, and contains 10.9 per cent. of alcohol and 23 per cent. of total solids.

No. 1743. Febrina. G. H. Lohman & Co. (No address given.) Misbranded. Warranted to be a cure for fever and ague. It is a dark-brown alcoholic solution of very bitter drugs, containing 18.1 per cent. of alcohol and 54 per cent. total solids.

No. 1744. Dr. O. P. Brown's Liver Invigorator. Dr. O. P. Brown, Jersey City, N. J. Misbranded. A cure for all diseases of the liver. It is a dirty-brown solution of intensely bitter drugs and contains a large amount of an unsightly precipitate in suspension. Contains 15.4 per cent. alcohol and 8.4 per cent. total solids.

No. 1745. Phosphatic Lemon Rye. Phosphatic Lemon Rye Company, St. Louis, Mo. It is a solution resembling whisky, which contains phosphoric acid and 20.9 per cent. of alcohol.

No. 1746. Dr. O. P. Brown's Verbian Restorative Assimilant. Dr. O. P. Brown, Jersey City, N. J. Misbranded. Claims to be a cure for indigestion, biliousness, nervousness, etc. An alcoholic solution of vegetable drugs, containing 21.2 per cent. alcohol and 5.8 per cent. of total solids.

No. 1748. Dr. O. P. Brown's Blood Purifier. Dr. O. P. Brown, Jersey City, N. J. Misbranded. Claims to be a cure whenever everything else fails. A brown aromatic solution of vegetable

drugs containing 21.9 per cent. of alcohol and 41.2 per cent. of total solids.

No. 1749. *Hunt's Remedy*. Hunt's Remedy Company, Providence, R. I. Misbranded. Cures dropsy and all diseases of the kidneys, etc. A brown solution of bitter vegetable drugs, containing 17.2 per cent. alcohol and 0.89 per cent. total solids.

No. 1750. *Bromolene*. G. H. Lohman & Co. (Address not printed on package.) A solution of bitter drugs, aromatized, containing 18.7 per cent. alcohol and 36 per cent. total solids.

No. 1751. *Dr. Turner's Shaker Neurogen*. Shaker Medical Company, St. Louis, Mo. A cure for all nervous troubles. A solution containing very pungent drugs, and 75.3 per cent. alcohol and 3.4 per cent. total solids.

No. 1752. *Brown's Pepsin Tonic*. The Brown Medical Manufacturing Company, Leavenworth, Kan. Misbranded. Claims to be an absolute cure for dyspepsia, headache and heartburn. It is a solution which, if pepsin were present, would be rendered inert by the 16 per cent. of alcohol which it contains. Contains 35.7 per cent. total solids.

No. 1753. *Leis Dandelion Tonic*. Leis Chemical Manufacturing Company, Lawrence, Kan. Misbranded. Claims to be a sure cure for diseases of the liver, kidneys, and digestive organs. A solution of vegetable drugs containing 20.2 per cent. of alcohol and 6 per cent. of total solids.

No. 1754. *Dr. J. H. McLean's Catarrh Snuff*, 314 Chestnut street, St. Louis, Mo. Misbranded. Claims to be a cure for almost any disease. Contains principally sulfur and tannic acid.

No. 1755. *Warner's Safe Asthma Cure*. H. W. Warner, Rochester, N. Y. Misbranded. Claims to be a cure for asthma. Consists principally of stramonium leaves with potassium nitrate.

No. 1756. *Dr. Phelix Le Bruns' G. & G. Cure*. Doctor Le Bruns, Chicago, Ill. Misbranded. Claims to be an absolute cure for diseases which are ordinarily considered incurable. The preparation consists of two packages, one containing pills, which are of a compound cathartic nature, and the other contains a powder composed of powdered hydrastis and alum.

No. 1757. *Cook's Gold Bond Oil*. Cook's Medical Company, Kansas City, Mo. Misbranded. Claims to be a cure for eighteen diseases, some of which are ordinarily considered incurable. Consists of a light-brown solution of volatile oils, principally turpentine, with some alcohol.

No. 1758. *Health-tone*. Stayart Drug Company, Chicago, Ill.

A solution containing ethyl acetate, alcohol, iron and inorganic salts.

No. 1782. Dilute Phosphoric Acid. Jas. R. Thornburg, Princeton, Kan. Passed.

No. 1783. Spirits of Nitrous Ether. Simms & Bunyan, Ransomville, Kan. The preparation was negative. No ethyl nitrite could be obtained from it. Illegal.

No. 1785. Dilute Phosphoric Acid. W. C. Sears, Burlington, Kan. Passed.

No. 1787. Solution of Ammonium Acetate. C. H. Puffer, Burlington, Kan. Passed.

No. 1791. Spirits Nitrous Ether. B. Wheldon, Emporia, Kan. The preparation yielded 0.59 per cent. of ethel nitrite. Illegal.

No. 1795. Spirits of Nitrous Ether. The Poehler Mercantile Company, Emporia, Kan. The preparation yielded 0.21 per cent. of ethel nitrite. Illegal.

No. 1801. Essence of Peppermint. Paul Orlopp, Burlington, Kan. Passed.

No. 1802. Tincture of Arnica. Jno. C. Loch, Lane, Kan. Passed.

No. 1804. Spirits of Nitrous Ether. J. S. Rowe, Le Roy, Kan. Preparation yielded 0.11 per cent. of ethel nitrite. Illegal.

No. 1810. Tryuna. Tryuna Chemical Company, St. Louis, Mo. Misbranded. Claims to cure catarrh. The preparation is composed of a package of tablets, which are of a laxative nature, and a little vial containing the catarrhal snuff, which is composed of sugar and other inorganic salts.

No. 1811. Ground Ginger. Steinwander & Stoffregen Coffee Company, St. Louis, Mo. The oleoresin content and ash are within the limits, and as there are no foreign substances this spice is acceptable. Passed.

No. 1812. Ground Mustard. Steinwander & Stoffregen Coffee Company, St. Louis, Mo. The ash content is rather high, but as the ethereal extract is normal, and as there is no foreign organic substance present this proves that the spice is acceptable. Passed.

No. 1813. Ground Pepper. Steinwander & Stoffregen Coffee Company, St. Louis, Mo. The ethereal extract, non-volatile ethereal extract and ash are normal. The microscopical examination shows no foreign matter, therefore the spice conforms with the standard. Passed.

No. 1814. Ground Allspice. Steinwander & Stoffregen Coffee Company, St. Louis, Mo. The ash content is somewhat higher than

the standard, but as the ethereal extract and the microscopical examination are favorable this spice is acceptable. Passed.

No. 1815. Ground Cloves. Steinwander & Stoffregen Coffee Company, St. Louis, Mo. The ethereal extract and ash content are normal, but the non-volatile ether extract is quite low. This spice is free from foreign substance. Passed.

No. 1816. Ground Cinnamon. Steinwander & Stoffregen Coffee Company, St. Louis, Mo. The oleoresin and ash content are within the limits of the standard, and as the microscopical examination shows that the spice is free from other substances it is acceptable. Passed.

No. 1817. Coffee. Kellam Coffee Company, Kansas City. The ash and fat contents are far within the limits of the standard, and as the sample is free from chicory it is acceptable. Passed.

Soft Drinks.

One of the harbingers of spring, and which is as certain as the advent of the robin or the small boy and marbles, is the activity of the manufacturers of soft drinks. This activity is already in evidence; therefore, "We hail thee, spring!"

Last season this department endeavored to advise manufacturers of the requirements of the law as to labels, and to point out certain sanitary requirements in the conduct of the business. We believe that the law applying to labels has been quite generally observed, and bottlers are to be commended for their promptness in that particular.

We wish to impress upon the minds of all manufacturers of soft drinks the importance of having a wholesome water supply and of thoroughly cleansing each bottle before refilling. A simple rinsing of the bottle is not sufficient cleansing; each bottle must be brushed inside or washed with shot or a similar substance, and then thoroughly washed with fresh, clean water. Often bottles are returned containing a number of flies, and if such bottles are not properly and effectively cleansed there is danger of infection of some kind in the contents of the bottle.

Dealers should be instructed that bottles should be turned upside down immediately upon being emptied, in order that they may drain, and that flies may not get into them. The sweetened pop is an attractive bait to flies, of which they will readily avail themselves unless the bottle is cared for as above indicated.

The public health may not be endangered by an improper label,

but serious consequences may arise to the consumers of soft drinks that are not pure and wholesome.

Our inspectors will make a close scoring on sanitary conditions this season, and we trust that the improvement of conditions noted last season may be continued until the Kansas product may be synonymous with the "Best Product."

The Eternal Conflict.

From The American Grocer.

The fight between good and evil, right and wrong, purity and impurity, will never cease until the dawn of the millenium. And it seems as if there is bound to be a never ending clash of interests for and against food legislation for which there is no necessity, if common sense is put into play and the main purpose of pure food laws be kept in view.

There are ten thousand interpretations of Divine law, but there is one great overruling command, in four letters—OBEY. And that applies to state and national food laws—obey. If the law or any part of it is unjust and burdensome the quickest way to have it repealed is to have it enforced. From the beginning of the movement for a national pure food law, in 1880, until it became United States law of 1906 there was a fight over its provisions. And as soon as plans began for its enforcement the conflict was renewed and seems as vigorous as ever.

Just now a fresh attack, without rhyme or reason, is being made on Dr. H. W. Wiley, as if he was responsible for the law and everything connected therewith. The time of Congressional Committees is taken to hear arguments against standards, which are not law; were not made by the Department of Agriculture; nor by Dr. Wiley, who happens to be a member of the board of official chemists charged with their making. There are manufacturers who find some of the standards so far below their idea of what they should be that they advertise "Better than United States standard." Those who object only make themselves ridiculous by abusing the head of the bureau of chemistry of the Department of Agriculture, because they are not suited. The act of Congress appointing the committee on standards, approved March 3, 1903, authorizes them "to establish standards of purity for food products and to determine what are regarded as adulteration therein, for the guidance of the officials of the various States and of the courts of justice." This committee held hearings in different cities, gave ample opportunity

for those interested to be heard, before reporting the adopted standards for approval and promulgation as official guides. Dr. Wiley was one of a number to fix these standards and is no more responsible than Chairman William Frear or Messrs. Jenkins, Scovell or Weber.

It may be good policy for food manufacturers to proclaim to 84,000,000 people that their products are not pure, but mixtures, compounds or imitations, the wholesomeness of which is brought into question largely through their activity in criticising the law and the rulings. We doubt it, because they give publicity and bring into prominence matters that needlessly discredit their products, besides fostering activity on the part of competitors—makers of absolutely pure food. They play against their own interests by pushing a campaign of publicity as to methods, and create—often unjustly—suspicion in the minds of consumers as to the integrity of goods bearing their labels.

It is time to quit fighting, give the authorities a chance to put the law into force, and let their action be tested in the courts. The first suit of that kind has been filed by the maker of a fake headache cure which was declared to be misbranded and also because it contained dangerous drugs. A few suits on points disputed and others to test the constitutionality of the law will soon settle the questions in dispute and reduce friction between the government and the food manufacturers.

The Excessively Good Man.

"He has no enemies," you say ;
My friend, your boast is poor :
He who hath mingled in the fray
Of duty that the brave endure
Must have made foes. If he has none,
Small is the work that he has done.
He has hit no traitor on the hip ;
He has cast no cup from perjured lip ;
He has never turned the wrong to right.
HE HAS BEEN A COWARD IN THE FIGHT.

And President Roosevelt adds :

"The man who never made a mistake
Is the one who never did anything."

Are Your Groceries Clean ?

Every one knows that the grocer contends continually with a great many uncleanly and unwholesome conditions. The very nature of the substances with which he deals has a tendency to make the store untidy. Yet, if the store is untidy and unwholesome, how can the goods which come from it be cleanly and in good condition?

One thing should always be remembered, and that is, that the dust blown about by the wind in a city street is full of bacteria and all sorts of vile contamination. If fruits and vegetables are exposed for sale on the sidewalk without covering, they must invariably accumulate a stock of filth which is not a good thing for the stomachs of human beings.

Every one recalls how such fruit and vegetables are frequently covered with a heavy layer of perceptible dust, this dust being nothing more or less than the dried offal of animals, the sweepings of houses, and all sorts of foul and unnamable filth. Fruits and vegetables should be exposed for sale only in closed receptacles.—*Iowa Health Bulletin.*

The Test For Bad Oysters.

The oyster being almost entirely composed of water, its density is but little more than that of water. The decomposition that, sooner or later, overtakes all fish, flesh, fowl and game products and terminates their usefulness as food is attended with an evolution of gas. A very small quantity of this gas is sufficient to overcome the difference of density between an oyster and fresh water and the former will float on the surface of the latter. This explains why the record is bare, or nearly so, of cases of ptomaine poisoning caused by the shucked oyster. The dealer sees the bad ones floating and throws them out. In the presence of the great numbers of victims of ptomaine poisoning caused by fish, flesh and fowl, this is a proud record. Incidentally it shows the mistake of dry refrigeration for the shucked oyster. Here is the way to get rid of the bad oysters: Drain off the liquor, place them in cool, fresh water, *quantum sufficit*, and stir gently, to give every one that wants to float a chance to rise to the surface. After all have settled down reject the floaters.—*Iowa Health Bulletin.*

A "Straight Front" Saved His Life.

Many a woman has had her life saved by her stays, but here there is a man who owes to his corsets the fact that he is alive and well and able to work.

Last May five workmen fell to the ground from the top of a three-story house in Myrtle street when the staging on which they were working gave way. All were seriously injured, Demers the worst of all. His spinal cord was affected, and the physicians shook their heads when they had him on the operating table at the city hospital. For weeks Demers's life was in the balance, and when the doctors got him around it seemed certain he would never be able to work again. His back was too weak to support his body.

"Get yourself fitted with a corset," the doctors told him, "and in a year or so you'll be yourself. If you don't you'll be a chronic invalid until you die."

With his wife he went to Boston and was fitted with the stoutest and strongest pair of corsets that could be found. He found a straight front that fitted him perfectly, and now he is in as good health, if not better, than he ever was.—*N. Y. Telegraph*.

Since the passage of the water and sewage law, the following cities have extended, or secured a new source of water supply, by approval of the Board, viz.: Kingman, Ellsworth, Beloit, Alma, Wellington, Lawrence, Winfield, Pittsburg and Garnett.

The following cities are contemplating a new source of supply in the near future: Emporia, Marion, Mineral, Kansas City, Horton and Fredonia.

The following cities have extended or put in new sewerage systems: Larned, Wichita, Wellington, Hutchinson, Caney, El Dorado, Winfield, and Fredonia.

The following cities are contemplating new systems or extensions in the near future: Lawrence, Topeka, Peabody, Kingman, Independence, Pratt, Marquette, Dodge City and Iola.

These municipal improvements augur well for the progressive and sanitary spirit and general prosperous condition of these cities. It might again be observed that the degree of purity and wholesomeness of a municipal water-supply is usually an index of the people's interest in municipal cleanliness.

The State Board of Health is not so much concerned about the technically illegal label as it is about the tubercular dairy cow and the country slaughter-house. What Kansas needs most at present is a reasonable state law looking towards the elimination of the tubercular dairy cow and providing for the inspection of all animals slaughtered and sold for food within the state. The government inspection in the large packing-houses emphasizes the importance and necessity of *post-mortem* inspection of all animals slaughtered for food.

Dr. Charles S. Huffman, of Columbus, county health officer of Cherokee county, has been appointed a member of the State Board of Health, *vice* Dr. L. A. Golden.

A Song for March.

Who sings of March, must sing the mad,
Lone man-at-arms, the straggler clad
 In motley white and brown—
Who in the wake of winter's flight
Turns now to caper, now to fight—
 Half hector and half clown.
One moment from a cloud-capped hill
He blares his slogan, wild and shrill;
 The next, with gusty laughter,
Outsteps the sunbeams as they dance,
And leers and floats, with backward glance,
 The maid who follows after.
 O! sing the maid,
 The light-heart maid,
Who follows, follows after.

He flees her down the lengthening days;
She follows him through woodland ways,
 O'er hills and vales between,
And sets for mark of victory
On every bush and hedge and tree
 Her flag of tender green;
And when her breath hath spiced the night
With promise of the warm delight
 Of young June's love and laughter,
No other song may true hearts sing
But "Speed thy passing, March, and bring
 The maid who follows after;
 The light-heart maid,
 The lily maid,
Who follows, follows after."

—T. A. Daly.

The Grip.

The gods let slip that fiendish grip
Upon me last week Sunday—
No fiercer storm than racked my form
E'er swept the Bay of Fundy;
But now good-by
To drugs say I—
Good-by to gnawing sorrow;
I am up to-day,
And, whoop! hooray!
I'm going out to-morrow!

What aches and pain in bones and brain
I had I need not mention;
It seems to me such pangs must be
Old Satan's own invention;
Albeit I
Was sure I'd die,
The doctor reassured me—
And true enough,
With his vile stuff,
He ultimately cured me.

As there I lay in bed all day,
How fair outside looked to me!
A smile so mild old nature smiled—
It seemed to warm clean through me
In chastened mood
The scene I viewed,
Inventing, sadly solus,
Fantastic rhymes
Between the times
I had to take a bolus.

Of quinine slugs and other drugs
I guess I took a million—
Such drugs as serve to set each nerve
To dancing a cotillion.
The doctors say
The only way
To rout the grip instanter,
Is to pour in
All kinds of sin—
Similibus curantur.

'Twas hard, and yet I'll soon forget
Those ills and cures distressing;
One's future lies 'neath gorgeous skies
When one is convalescing!
So now, good-by
To drugs say I—
Good-by, thou phantom Sorrow!
I am up to-day,
And, whoop! hooray!
I'm going out to-morrow!

—Eugene Field.

The Unsuspected but Dangerously Tuberculous Cow.

By E. C. SCHROEDER, M. D. V., Circular 118, Bureau of Animal Industry, United States Department of Agriculture. Issued December 21, 1907.

INTRODUCTION.

Tuberculosis is ordinarily a chronic, slowly progressive disease; consequently some time passes in most instances after a cow becomes affected before she begins to expel and scatter tubercle bacilli in a way dangerous to the health of other animals and persons. Precisely how much time thus passes cannot be determined with certainty, as it varies greatly with different animals, and is dependent upon individual peculiarities, the location of the disease in the body, the virulence of the infecting bacilli, and a number of unknown conditions. Practical experience indicates that the interval between infection and the dangerous expulsion and dissemination of tubercle bacilli is, with rare exceptions, sufficiently long for a herd to be kept entirely free from dangerously tuberculous animals, provided the tuberculin test is applied not less than once yearly, and all reacting animals are segregated and no animal is added until it has passed the test.

The tuberculin test for tuberculosis is almost universally accepted by veterinarians as a nearly infallible means of diagnosis, but it gives no satisfactory information about the extent to which reacting animals are affected. Microscopic examinations and inoculation tests of the secretions and discharges from a tuberculous animal often prove that it is actively expelling and scattering tubercle bacilli, and is therefore positively dangerous; but the contrary, that a tuberculous animal has not reached a dangerous stage, cannot be absolutely determined. For this reason, although we know that all cases of tuberculosis diagnosed with the aid of tuberculin are not at the time necessarily dangerous, and that some may not be dangerous until many months have passed, we are forced to assume for practical purposes that every tuberculous cow is dangerous from the moment she is known to be affected. We know that if she is not immediately dangerous she will rarely fail to become so, first intermittently, expelling tubercle bacilli occasionally, and then continuously, expelling and scattering them all the time in increasing numbers. Hence it should be clearly understood that the present stage of our knowledge forces us to regard every tuberculous cow as dangerous, and that no distinction for practical application can be made between dangerously and not dangerously tuberculous cows.

WHAT IS A DANGEROUSLY TUBERCULOUS COW?

If we use the term "dangerously tuberculous" in the restricted sense, the following practical, important questions may be asked: What is a dangerously tuberculous cow? What is her appearance? How does she act, and what symptoms of disease does she show? What percentage of tuberculous cows in our dairy herds is dangerously tuberculous?

The first question has already been answered. The dangerously tuber-

culous cow, from the provisional point of view, is an animal that is expelling tubercle bacilli from her body, either with her milk, urine, fæces, saliva, or otherwise, in such numbers and with such frequency that their presence can be certainly detected.

The examinations made at the Experiment Station show that the commonest way in which tubercle bacilli pass from the body of a tuberculous cow is with her fæces. Every case of tuberculosis examined that was found to be expelling tubercle bacilli in any way showed them in the fæces, and they were found in the fæces many times when they could not elsewhere be detected. From this it is reasonable to conclude that the greatest danger from tuberculous cows lies in the infectious character of the material that passes from their bowels. The significance of this fact is apparent when it is viewed in conjunction with the following paragraphs quoted from a bulletin recently published by the United States Public Health and Marine Hospital Service:*

"In addition to being old and warm, much of the milk sold in Washington is dirty. Fifty-one of the 172 samples examined showed no visible deposit in the original container after several hours standing. Fifteen of the samples contained a very small amount of dirt, 98 contained a small amount of dirt, 8 contained much dirt, and 1 contained (mouse?) fæces.

"This foreign matter (dirt) when examined under the microscope was found to consist of fæcal matter, hair, epithelial and other cells, straw, bacteria, and all manner of extraneous substances that have no place in clean milk."

After several hours' standing in the original containers, 121 of 172 samples, or 70 per cent., of the kind of milk that reaches the city consumer showed a visible deposit of dirt, which was found on microscopic examination to be made up in part of fæcal matter. This dirt is characterized in the report of the United States Public Health and Marine Hospital Service as "fully as undesirable as pathogenic or disease-producing germs are dangerous." To this should be added that we are now in a position to say that the presence of cow fæces in milk, entirely apart from the impression it may make on the taste and appetite of the consumer, is *prima facie* evidence that the milk, when it is obtained from a tuberculous dairy herd, contains pathogenic bacteria. We will later return to this subject.

PHYSICAL APPEARANCE OF DANGEROUSLY TUBERCULOUS COWS.

The second and third questions may be answered together. The dangerously tuberculous cow, long after she has become dangerous, may continue to look and act like a healthy animal. She may show neither symptoms of disease nor discomfort; her appetite may be good, and she may conceive, calve and milk like an ordinary cow. Sometimes, not always, if we except long-standing cases of tuberculosis, she has a slight, infrequent, easily overlooked cough. If she is a member of a herd in which the other animals are thin, then, too, she is thin; on the other hand, if she is a member of a sleek, fat herd, she may be the sleekest and fattest of the lot. As a rule, it is no exaggeration to say

* Hygienic Laboratory, Bulletin 35, p. 71.

that visibly tuberculous cows have very probably been dangerously tuberculous for several years.

To illustrate more effectually the appearance of the dangerously tuberculous cow, the photographs of seven are given, of which it is definitely known that they are expelling tubercle bacilli. Six of the seven cows were removed directly from dairy herds, and their milk was being

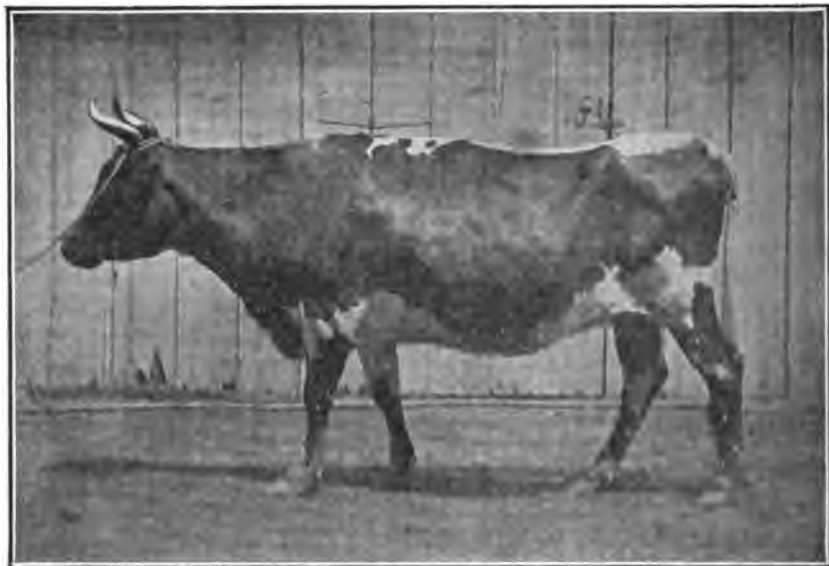


FIG. 1.—Cow No. 1, apparently in excellent health, but affected with tuberculosis for more than six years; many tubercle bacilli found in fæces. (Schroeder, Circular 118, Bureau of Animal Industry, United States Department of Agriculture.)

regularly distributed to customers in Washington, D. C. Cow No. 509, undoubtedly the most dangerous among them, is a quiet little animal, with many points to recommend her for private family service.

Cow No. 1 has been affected with tuberculosis more than six years. Microscopical examinations show that she is constantly passing tubercle bacilli with her fæces. The inoculation of guinea pigs with her fæces, also with milk slightly soiled with her fæces, and with butter made from milk slightly soiled with her fæces, caused them to become affected with typical generalized tuberculosis. The cow has been in the possession of the Bureau Experiment Station since June, 1895, and is now fully eighteen years old. Her health is apparently excellent and her appetite good; she has no cough that would attract the attention of the casual observer. Even if she were not affected with tuberculosis, her present condition, as shown by the picture, would have to be regarded as very good for an animal of her age.*

* Since the above was written, cow No. 1 died very suddenly. When she was stabled for the night she appeared to be in her usual condition, and ate the whole of her evening feed; the next morning she was found dead. The post-mortem examination showed lesions of generalized advanced tuberculosis.

Cow No. 509 was tested with tuberculin in a dairy herd and found to be tuberculous about nine months ago. Directly after her removal from the herd, which was supplying milk to Washington, D. C., microscopic examinations showed the presence of tubercle bacilli in both her milk and faeces. In one quarter of her udder a small nodule about the size of a

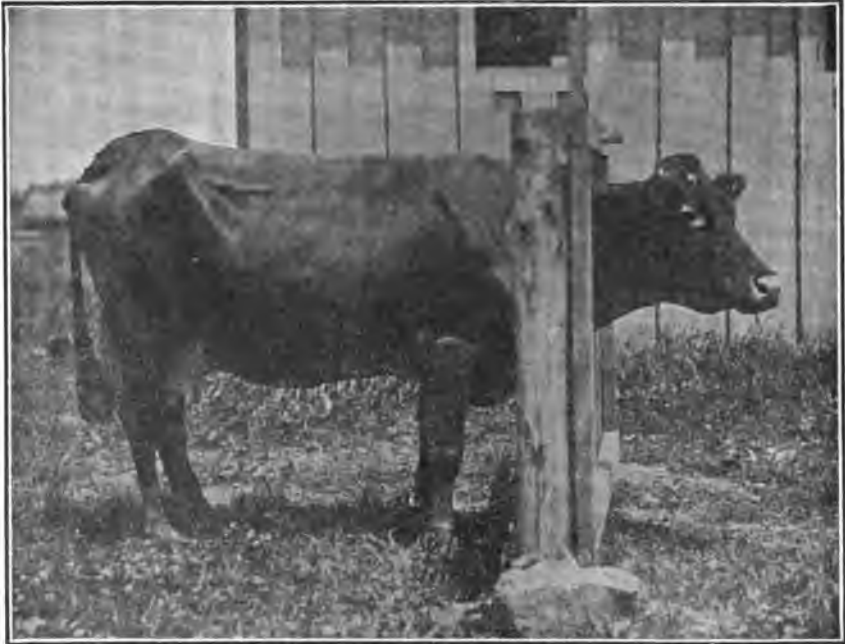


FIG. 2. Cow No. 509, in good condition and showing no symptoms of disease: recently in a herd supplying milk to Washington; tubercle bacilli present in both milk and faeces. (Schroeder, Circular 118, Bureau of Animal Industry, United States Department of Agriculture.)

pea was found, the tuberculous character of which was not suspected until after she reached the Bureau Experiment Station. Guinea pigs inoculated with her milk and with butter made from her milk died affected with typical generalized tuberculosis. The butter made from her milk was ordinary salted butter, and in this the infection persisted with undiminished virulence for forty-nine days. Tests are being made to determine how much longer than the time named tubercle bacilli will retain their virulence in ordinary salted butter.

The cow is seemingly in better physical condition than most dairy cows. Her appetite is good, she has no cough, and shows no symptoms of disease or distress.

She calved about six months before the picture was taken. Her calf remained with her until it was weaned; it was killed at the age of five months, and found on post-mortem examination to be affected with generalized tuberculosis. Four other calves, born of healthy cows, were also

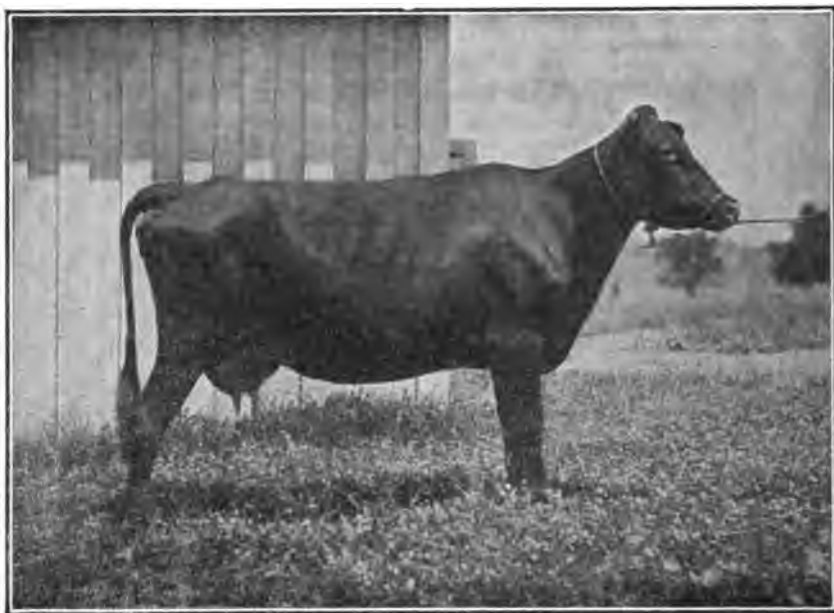


FIG. 8.—Cow No. 512, in good condition and showing no symptoms of disease; recently in a herd supplying milk to Washington; was scattering tubercle bacilli in a dangerous way. (Schroeder, Circular 118, Bureau of Animal Industry, United States Department of Agriculture.)

fed the milk of cow No. 509. One calf was fed one day, one three days, one seven days and one thirty days. The calves fed respectively one, three and seven days sucked the milk directly from the cow's udder, but were not allowed to be near her or to come in contact with tuberculous infection except at the time of feeding. The calf that was fed thirty days received the milk in a pail, and was never near tuberculous infection other than that contained in the milk. All four calves contracted tuberculosis.

Cow No. 512 was tested with tuberculin in a dairy herd and found to be tuberculous eight months ago. Directly after her removal from the herd, which was supplying milk to Washington, D. C., microscopic examination showed that she was passing tubercle bacilli with her feces. Her general condition is good, she has an excellent appetite, does not cough, and does not show a single symptom of tuberculosis or other disease. Without a tuberculin test her tuberculous condition would not be suspected, and without the microscopic test of her feces it would not be known that she is scattering tubercle bacilli in a dangerous way. She calved about three and one-half months before the picture was taken.

The record of cow No. 518 is identical with that of No. 512, with the exception that the tuberculin test which first demonstrated her tuberculous character was made one month later, and it is not known when she produced her last calf.

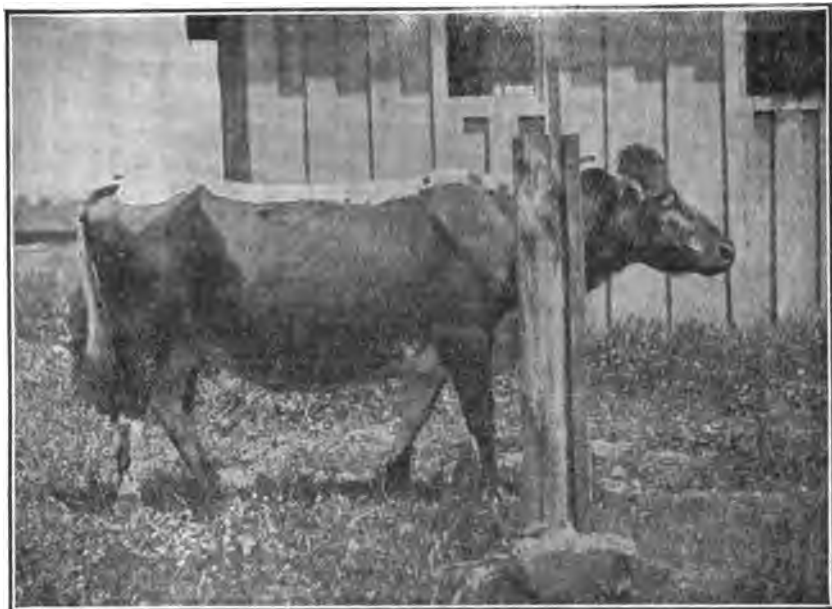


FIG. 4.—Cow No. 518, recently found affected with tuberculosis in a herd supplying milk to Washington; apparently healthy, but actually scattering tubercle bacilli. (Schroeder, Circular 118, Bureau of Animal Industry, United States Department of Agriculture.)

The record of cow No. 537 is identical with that of No. 512, excepting that the tuberculin test which first demonstrated her tuberculous character was made four months later, and it is not known when she produced her last calf.

Cow No. 552 was tested with tuberculin in a dairy herd about four months ago, and found to be affected with tuberculosis. Directly after her removal from the herd, which was supplying milk to Washington, D. C., microscopic examinations showed that she was passing tubercle bacilli with her fæces. Subcutaneous inoculation of guinea pigs with her fæces caused them to become affected with typical generalized tuberculosis. It is not known when she produced her last calf.

The significance of the inoculation of guinea pigs with her fæces must be judged in connection with the fact that the amount of fæces inoculated into each guinea pig is only a fraction of a grain. A cow of average size passes about thirty pounds of fæces each day, and the small amount inoculated into a guinea pig to test for the presence of tubercle bacilli contains many other bacteria, some of which, when injected under the skin, cause inflammatory processes that prevent the actual entrance of tubercle bacilli into the tissues in a way to cause their absorption and the production of tuberculosis.

The cows shown in the illustrations, relative to breed and visible



FIG. 5.—Cow No. 537, recently condemned as tuberculous in a herd supplying milk to Washington; though apparently in good health, she was passing tubercle bacilli. (Schroeder, Circular 118, Bureau of Animal Industry, United States Department of Agriculture.)

condition, are fairly representative of those usually seen in the better class of dairy herds from which the milk supply of cities is derived. Few better and many much worse looking cows are found in urban and suburban herds. The simple fact that a cow is thin does not condemn her. Dairy cows are not fat animals. Before her milk flow begins, a cow is subjected to the drain that accompanies the production and delivery of a calf; and afterwards the feed she eats is converted into milk, rather than deposited in her body as fat. Cows that lay on much fat while they are milking are rarely economical for dairy purposes.

In addition to cow No. 1, another old cow remained under observation at the Experiment Station a long time. She died last spring, after she had reached the age of twenty-one years. Before her death it was established that she was scattering tubercle bacilli through the mouth and through the rectum; and pure cultures of these germs, isolated from the tuberculosis lesions of guinea pigs inoculated with saliva and feces, are now growing in the pathological division of the Bureau of Animal Industry. The tuberculous condition of the old cow was known six years before she died, but, notwithstanding her great age, she retained the semblance of health up to the last year of her life, during which she failed rapidly, became very thin, and suffered with a severe cough.

To the six pictures given one more of a dangerously tuberculous cow



FIG. 6.—Cow No. 552, found in a herd whose milk was sold in Washington; apparently healthy, but in fact dangerously tuberculous. (Schroeder, Circular 118, Bureau of Animal Industry, United States Department of Agriculture.)

is added. This last picture is presented to show that a dangerously tuberculous cow may actually be in prime, fat, beef condition.

This cow (No. 551) was tested with tuberculin in a dairy herd about four months before her picture was taken, and was found to be affected with tuberculosis. Microscopic examinations show that she is passing tubercle bacilli with her feces. She is entirely too fat to be regarded as a good dairy cow, and shows no symptoms of disease or distress. A fairly large number among tuberculous cows of equally fine appearance examined post-mortem at the Experiment Station have been found to be affected with advanced and more or less generalized tuberculosis.

PERCENTAGE OF DANGEROUS COWS IN DAIRY HERDS.

We now come to the fourth question, which concerns the percentage of cows in dairy herds that are dangerously tuberculous among those found to be affected with tuberculosis through the application of the tuberculin test. It must be borne in mind constantly that the term "dangerously tuberculous" is used only for the sake of convenience, to designate those cows of which it can be shown beyond doubt that they are disseminating tubercle bacilli, not actually to separate the dangerously from the not dangerously tuberculous, which is impossible.

The number of cows examined to obtain an answer to the fourth question was not large; there were twenty-four which were removed directly from dairy herds, and six others which were known to have been affected

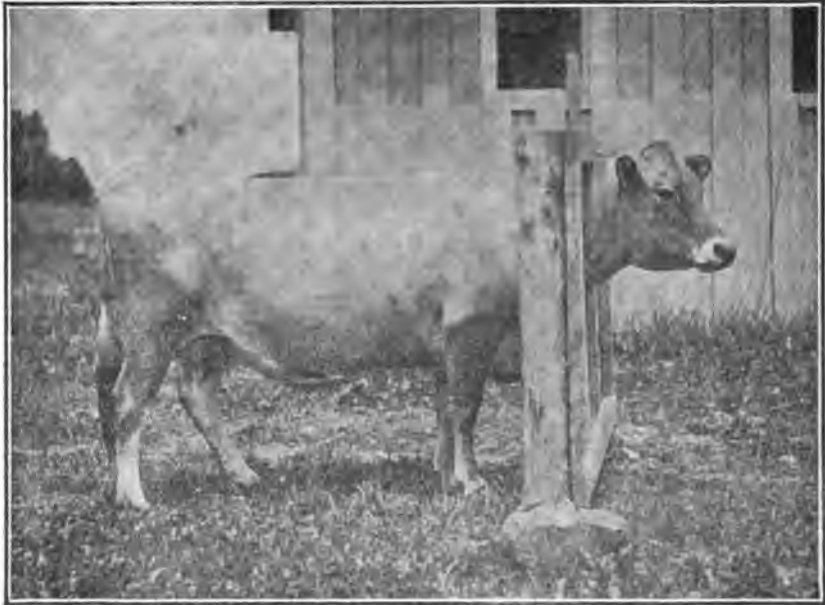


FIG. 7.—Cow No. 551, too fat for dairy purposes, and appearing to be perfectly healthy; found recently in a herd supplying milk to Washington; tubercle bacilli found in faeces. (Schroeder, Circular 118, Bureau of Animal Industry, United States Department of Agriculture.)

with tuberculosis three years or more. Among the former, ten, or a trifle over forty per cent., were found to be expelling tubercle bacilli, and among the latter all were expelling them. Examinations of the same kind will be continued, and a report will probably be published later, when the results in a larger number of cases can be given.

The cows removed from dairy herds, notwithstanding their tuberculous condition, had the general appearance of ordinary dairy cows; and those regarding which it could be demonstrated that they were expelling tubercle bacilli appeared to be and acted fully as well as those regarding which this could not be demonstrated. Among the twenty-four cows, twelve were specially selected for another investigation, because a careful physical inspection indicated that they were in the early stages of the disease. From this we may conclude that the examination of a larger number of tuberculous dairy cows will tend to increase rather than reduce the percentage of those which are without doubt expelling tubercle bacilli; though it must be admitted that the physical inspection of tuberculous cows gives no reliable or satisfactory information about their condition unless they are so badly diseased that no conscientious dairyman would continue to sell their milk.

From the six cows known to have been affected with tuberculosis for three years or longer, all of which were passing tubercle bacilli in a manner capable of actual proof, we may justly conclude that with pos-

sibly rare exceptions all tuberculous cows eventually become dangerous; and it is merely a question of time after a cow has contracted tuberculosis when she will begin to scatter tubercle bacilli.

The prevalence of tuberculosis among dairy cows has been estimated at all the way from ten per cent. to ninety per cent. The one figure is certainly too low and the other too high. There are many herds that have never been tuberculous, some that have been cleaned of tuberculosis, and others in which every cow is affected. The best evidence we have of the common presence of tuberculosis among dairy cows is the claim made by some dairymen that a milk famine would result from the condemnation of all tuberculous cows for dairy purposes. The dairymen who make this claim evidently know what they are talking about; and, though we may assume that they make it rather with the intention to oppose a feared general application of the tuberculin test to dairy herds than to call attention to an extremely dangerous and objectionable condition, the claim is in truth a strong argument to prove how urgently vigorous action is needed to clean dairy herds of diseased animals.

DANGER FROM INFECTED MILK AND BUTTER.

We must now return to the significance of a sediment in milk. We have seen from the work of the United States Public Health and Marine Hospital Service that among 172 samples of city milk examined, 121, or 70 per cent., contained a sediment after standing a few hours in the original containers, and that the sediment consisted in part of cow fæces. Tuberculosis is so common among dairy cattle that milk producers frequently assert, as before stated, that a milk famine would be one of the results if the tuberculin test were applied to all dairy cattle, and if all those reacting were condemned for dairy purposes. We know that it can be definitely shown that about forty per cent. of all cows that react to the tuberculin test, though they still retain the appearance of health, are actively passing tubercle bacilli; we know that the commonest mode for tubercle bacilli to be expelled from the body of a tuberculous cow is with her fæces; and we know that it has been demonstrated that the bacilli contained in the fæces of tuberculous cows are alive and virulent. Add to this the two facts that butter made from milk soiled with the fæces of cow No. 1 produced tuberculosis on the inoculation of guinea pigs, and that the tuberculous infection contained in the butter made from the milk of cow No. 509 showed no diminution of virulence after forty-nine days, and it is hardly necessary to formulate the conclusion that tuberculosis among dairy cows is one of the greatest dangers to which public health is exposed, and that every effort should be made by those who have the welfare of humanity at heart to correct this great evil.

Doctors Herr and Beninde,¹ two German investigators, concluded from their work that skim-milk, buttermilk, cream, butter and centrifuge slime or sediment obtained from infected milk contained tubercle bacilli, and that the most intensely infected of these substances are butter and centrifuge slime. Among 444 samples of butter tested by them and other investigators, 60, or over 13 per cent., were found to contain

1. *Zeitschrift für Hygiene*, etc., vol. 38, p. 180.

tubercle bacilli. Broërs² of Utrecht places the frequency with which the milk of his country contains tubercle bacilli at 10 per cent., and shows that they may be present in skim-milk, cream, buttermilk and butter, and retain their virulence a long time. Brittlebank³ of England reports that the milk supplied to the city of Manchester, obtained from different counties, showed from 3 per cent. to 12 per cent. of the samples examined to be infected with tubercle bacilli. Dr. Albin Burkhardt,⁴ after the examination of 1452 human cadavers, found that 91 per cent. showed lesions of tuberculosis, irrespective of the cause of death; Nägeli, from the examination of 500 cadavers, places the figure at 96 per cent.; and Schlenker, from 200, makes it 66 per cent. Other investigators have added the weight of their testimony to substantiate this amazing frequency with which persons are shown to be affected with tuberculosis. These autopsy revelations indicate that few human beings entirely escape tuberculosis, though the majority die of other diseases, and many are not conscious during their lives that they are affected. This is just what we should expect when we know that tubercle bacilli, concealed in butter, milk, cream and other dairy products, are systematically and regularly distributed in a way that insures their ingestion by persons wherever the sale of milk from tuberculous cows is permitted.

If the public were thoroughly informed of the dangers—among which tuberculosis is only one of many—to which it is exposed through the use of impure, dirty and infected milk, the demand for milk of approved purity would rise to the magnitude of a concerted national movement, and would sweep all objections and difficulties out of its way. Inform a man that a single one among many loaves of bread—you do not know which—is contaminated with arsenic, strychnin, or some other commonly dreaded poison, and he will go very hungry before he risks eating any loaf of the lot. He knows what arsenic and strychnin are, and what he must expect from their introduction into his stomach. Yet he continues to use milk and dairy products, and permits his family to use them, without first testing their purity or insisting that the doubt about their purity shall be removed, notwithstanding that they have repeatedly been shown to contain poisons fully as objectionable and potent as those above named, such as the germs of tuberculosis, typhoid fever, scarlet fever, diphtheria and other diseases, and the poisons that are the cause for the high death rate from abdominal diseases among children who have not passed the milk-drinking period of life.

THE GREAT IMPORTANCE OF A PURE MILK SUPPLY.

There is an important moral side to the milk question which must not be ignored. We may have the right—a very doubtful right, to be exact—to neglect the dangers to which we, as adults capable of judging and acting for ourselves, are exposed; but we have absolutely no right to neglect the conditions that cause suffering and death among children. The failure to act and to act quickly and unceasingly until a safe milk,

2. *Zeitschrift für Tuberkulose*, etc., vol. X, No. 3.

3. *Experiment Station Record*, Department of Agriculture, vol. XVIII, p. 581.

4. *Zeitschrift für Hygiene*, etc., vol. 53, No. 1.

for children, at least, is within easy reach of every mother, may be characterized as barbarous, if not criminal, indifference. It is an offense against the innocent, unquestioning confidence which children repose in their adult friends.

Under our present conditions of civilization the importance of milk is second only to that of air and water. Without milk thousands of children who grow to useful maturity would starve before they completed the first year of their lives. The excellent work done by Dr. George W. Goler, of Rochester, N. Y., proved beyond doubt that thousands of lives are annually lost through the use of impure milk. The reform his praiseworthy and untiring energy brought about in Rochester, by no means a very large city, reduced the mortality among children under five years from 7451 for the ten years ending in 1896 to 4965 for the ten years ending in 1906. This shows a saving of 2486 lives, among which 1554, or 62.5 per cent., were children under one year old—that is, had not passed the period of life during which milk forms the most important element of their daily food.

What can be done by substituting a pure milk supply for an impure one is shown by the following quotation from the New York Medical Record's London letter of July 26, 1907:*

"At Leeds a voluntary society established a year ago a depot for supplying a pure milk, as the corporation had no power to do so. But the health officer has made a report on the working. He concludes that, making allowance for the mortality for the first week of life and for those born moribund, there has been a saving of life of twenty-five per cent. among the children using the society's milk, as compared with those living in the same district at the same ages and during the same seasons fed otherwise. The experiment was on a small scale, but as far as it went was more successful than he could have anticipated."

The dairyman is not alone to blame for impure milk. As a rule, he attempts to supply a pure milk to his customers, and is not conscious of the impurities and infections in the article he is distributing. The price he receives is too low for the production of a constantly pure milk. He should be better paid. If the money that now goes to druggists, doctors, undertakers and burial grounds directly through the use of impure and unwholesome milk could be diverted to the dairyman, he would be amply paid for producing a wholesome, safe milk, and the entire community would profit by having better health, fewer deaths and less suffering.

CONCLUSIONS.

1. The dangerously tuberculous cow is an animal that may long retain the appearance and general semblance of perfect health.
2. The methods we now have to detect the presence of tubercle bacilli in the secretions and discharges from tuberculous cows are too crude to give positive results unless the bacilli are quite numerous; hence, while we can frequently obtain direct evidence that a tuberculous cow is dangerous, the failure to obtain such evidence does not prove that a tuberculous cow is safe.
3. Among tuberculous dairy cows that retain the appearance of health

* New York Medical Record, August 17, 1907, p. 275.

and are not known to be affected until they are tested with tuberculin, forty per cent. or more actively expel tubercle bacilli from their bodies in a way dangerous to the health of other animals and persons.

4. Dairy cows that have been affected with tuberculosis three years or more, with possibly rare exceptions, are active agents for the dissemination of tubercle bacilli.

5. The general evidence justifies the conclusion that tuberculous cows do not expel tubercle bacilli until some time after they contract the affection. The practical importance of this is that it enables us to clean herds of tuberculous cattle by the periodic application of the tuberculin test and the segregation of all reacting animals.

6. The interval of time that elapses between infection with tuberculosis and the dangerous expulsion of tubercle bacilli cannot serve as a reason for retaining a tuberculous cow in a dairy herd after the fact that she is tuberculous has been determined. The duration of the interval after infection before the expulsion of bacilli begins varies greatly with different animals, and it is rarely possible to ascertain how long a cow has been affected when her tuberculous condition is first discovered.

7. From the present as well as from former* investigations we know that the commonest way for tubercle bacilli to pass from the bodies of tuberculous cows is with their *fæces*. This fact, together with the common presence of tuberculosis among dairy cows and the frequency with which cow *fæces* are found in the milk that reaches the consumer, is clear evidence that a considerable proportion of our dairy products are infected with tubercle bacilli.

8. The danger from the presence of tuberculosis among dairy cows is not confined to the use of milk as a beverage. When tubercle bacilli are present in milk they enter the various articles of diet prepared from it, and are specially numerous in butter, in which they may remain alive seven weeks or longer without showing a diminution of virulence.

9. The distribution of tubercle bacilli from tuberculous cattle in a way to endanger human health is not left to chance. It is a commercial, systematic distribution, from door to door, or rather from table to table. As long as the use of tuberculous dairy cows is permitted the manner in which dairy products are distributed will insure that practically every member of the human family is exposed to tuberculosis. This may explain why three European investigators from their post-mortem examinations of respectively 1452, 500 and 100 bodies of persons who died from various causes found that, among this total of 2052 bodies no less than ninety-one per cent. showed lesions of tuberculosis.

10. While the danger to which public health is exposed through the use of milk from tuberculous cows is of a magnitude almost beyond conception, it is, unfortunately, only one among many dangers to which persons are exposed through the use of impure, infected and dirty milk.

11. If the inclination of the general public does not drive it to correct the evils to which it is exposed through the use of impure, infected and dirty milk, it should bear in mind that common humanity imposes various sacred obligations, among which pure, wholesome milk for children

* Bureau of Animal Industry Bulletin 99.

ranks near to the first place. We have no right to shirk this obligation, and would have no inclination to shirk or ignore it if we took the time and trouble to investigate the number of deaths, especially among infants, directly due to contaminated milk. Most intelligent persons who read have some knowledge of the fact that numerous babies die from no other cause than the use of impure milk. Unfortunately, the frequency with which milk from tuberculous cows causes tuberculosis is not so clearly apparent, because of the insidious, chronic character of the affection.

12. Our dairy herds can be cleaned of tuberculous cows by the proper application of the tuberculin test and the segregation of all reacting animals. After years of observation the tuberculin test has been found to be a more nearly infallible means for diagnosing tuberculosis than any we have for diagnosing other diseases of men and animals.

The Prophylactic Value of Vaccination.

FROM PUBLIC HEALTH REPORTS.

By Passed Asst. Surg. HENRY S. MATHEWSON, of the Public Health and Marine Hospital Service.

Smallpox is supposed to have originated in Africa in prehistoric times. The first historical reference to the disease is an account of an epidemic of smallpox which developed in the Abyssinian army besieging Mecca in the year 571. From Mecca it spread over Asia and Europe. Procopius, in his history of the Eastern Empire, describes smallpox as present in epidemic form in Constantinople in 581, and Gregory of Tours records its presence in southern France in the same year. Throughout the middle ages reference to smallpox are few and misleading, as it was much confused with measles and syphilis. The very name smallpox shows its confusion with and final differentiation from syphilis, or the pox, as syphilis was commonly called at that time. By the year 1600 smallpox had assumed epidemic form throughout Europe, and in the following 200 years it continued its ravages unchecked, save by the exhaustion of the susceptible following years of great epidemics. Various mysterious causes have been assigned for the rise of certain infectious diseases to epidemic form at varying intervals, but the simple explanation suffices that in the interval a new generation is born and grows up and furnishes new fuel for the flame.

In England the disease was always present and but 1 person in 25 escaped an attack of smallpox. From 1761 to 1800 there died in the city of London an average of 2037 persons yearly from smallpox.* Its omnipresence is shown by the common proverbial saying that "few escape love and smallpox." It confined its assaults to no class, and royalty suffered equally with the peasant and the pauper, thus clearly indicating that differences in sanitary surroundings did not influence the incidence of the disease. It is estimated that in the 100 years from 1700 to 1800 an average of 600,000 persons died yearly from smallpox throughout the world.† Among preventive measures, prior to the discovery of vaccina-

* Second Report Royal Vaccination Commission, 1890, p. 290.

† Welch and Schamberg, p. 18.

tion, inoculation with the disease deserves a brief mention. Among the Turks it had long been practiced, and it was introduced into England in 1721 by Lady Mary Wortley Montague, who returned in that year from a period of residence in Constantinople. The advantages of inoculation were that one could by this means have the disease when young, when in good health, at a favorable time of the year, and often in a mild form. Many among the educated availed themselves of this practice, but it never became popular among the masses, as death not infrequently followed inoculation.

In the same year, 1721, Dr. Zabdiel Boylston, of Boston, introduced inoculation in America. During this year an epidemic of smallpox was present in Boston. Of Boylston's 286 inoculated cases, 6 died, a percentage of 2.09. During the same period, of 5759 cases acquired by contagion, 844 died, a percentage of 14.6. During the colonial period smallpox was very prevalent, and scarcely a personal description is found in the prints or literature of the times that does not contain the terms "pockmarked" or "pock-fretten." To have had smallpox was a valuable recommendation in seeking employment, and this fact contributed to the establishment of inoculation hospitals in various parts of the country. Two were in operation near Boston in the year 1764, one of which contained 480 beds; others were established in the vicinity of New York and Philadelphia. There was much opposition to inoculation, and the practice ceased upon the discovery of vaccination.

Discovery of Vaccination.—Prior to this discovery it had long been known that an attack of cowpox conferred immunity to smallpox. This fact has been observed by those engaged in dairying and the care of cattle in various parts of the world. In the dairy counties of England, among the Indian shepherds of Mexico, of Baluchistan, of India, and among the dairy population of Turkey smallpox had lost its terrors, but it remained for the acute mind of Edward Jenner to generalize from these isolated examples of immunity. He was living in Sodbury, England, when the chance remark of a dairy maid, referring to smallpox then prevalent, "Oh, I cannot take that disease, for I have had cowpox," called his attention to the subject. On May 14, 1796, he vaccinated his first case, James Phipps, aged eight years, using serum taken from a cowpox vesicle on the hand of a dairy maid; on July 1 he proved the immunity of the boy to smallpox by his failure in repeated attempts to give him smallpox either by inoculation or exposure to the disease. The experiment was repeated many times in other subjects, and finally, in 1798, Jenner published an account of his work entitled "An Inquiry into the Causes and Effects of Variolæ Vaccinæ (Cowpox)." The discovery met with a storm of opposition and abuse.

The parliament of England testified to the importance of Jenner's discovery by voting him £10,000 in 1802 and £20,000 in 1807. News of the discovery of vaccination spread rapidly to America, but the difficulty of conveying the vaccine virus without loss of potency delayed the first successful vaccination in the United States until July 8, 1800, when Dr. Benjamin Waterhouse, professor of medicine in Harvard College, successfully vaccinated his son Daniel, a boy of five years of age. Many successful vaccinations followed in Boston, and from these cases virus

was conveyed to New York and Philadelphia. President Jefferson showed great interest in the discovery and lent the aid of his support to the new cause, the first vaccination in Washington being made on a member of his own family August 6, 1801. In 1802 he wrote to Doctor Waterhouse expressing recognition of the value of his work, and in 1806 he addressed the following letter to Doctor Jenner:

"MONTICELLO, VA., May 14, 1806.

"SIR—I have received a copy of the evidence at large respecting the discovery of the vaccine inoculation, which you have been pleased to send me and for which I return you many thanks. Having been among the early converts of this part of the globe to its efficacy, I took an early part in recommending it to my countrymen. I avail myself of this occasion to render you my portion of the tribute and gratitude due you from the whole human family. Medicine has never before produced any single improvement of such utility. . . . You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived; future nations will know by history only that the loathsome smallpox has existed and by you has been extirpated. Accept the most fervent wishes for your health and happiness, and assurance of the greatest respect and consideration.

THOMAS JEFFERSON."

Time has confirmed the soundness of the President's judgment as to the value of vaccination, but his prophecy as to the disappearance of smallpox still awaits fulfillment.

Vaccine Virus.—For many years after the discovery of vaccination the arm to arm method was employed. This consisted, where possible, of the direct transference of the virus from the vesicle on the arm of one person to a small wound on the arm of another; or threads were wet in the fluid contained in the vesicle and dried and sent to a distance, where the threads were moistened and the material on them was used to vaccinate. This method of human arm to arm vaccination had its disadvantages and dangers. Syphilis was thus conveyed from person to person and care was not taken as to the contamination of the virus with pus-producing organisms.

A safer method of securing virus was soon sought, and Galbiati, an Italian physician, in 1811, first suggested that cowpox be artificially produced in calves and the virus obtained from these vesicles used for vaccination. This method was gradually adopted. Beginning with a spontaneous case of cowpox, calves are inoculated, and thus a "strain" of virus is developed.

The process of vaccinating the calf is as follows:

The posterior half of its belly is shaved, cleansed, scarified in parallel lines, and inoculated with vaccine virus. The vesicles form in long, parallel lines; when mature, their content is removed under antiseptic precautions, mixed with glycerine, and allowed to ripen for from four to six weeks. It is frequently tested for potency and freedom from contamination, and if it meets the government requirements is prepared for market, either dried upon "ivory points" or put up in small glass tubes.

France and the United States are at present using a "strain" developed from a case of cowpox occurring in Beaugency, France, in 1871.

There is also in use with us a "strain" derived from a case of cowpox occurring in Cohasset, Mass., in 1881. The English official vaccine at

present is derived from a case of cowpox occurring in England in 1881. These "strains" are maintained by transference from calf to calf. Cowpox is believed to be smallpox in a modified form and it is becoming a very rare disease. Should the present "strains" of virus die out, it is possible to develop cowpox in the cow by inoculations with smallpox material from a human subject; otherwise the practical disappearance of cowpox would be a serious matter should the present "strains" of vaccine die out.

At present the production of vaccine virus in the United States is under government control. The laboratories where it is produced are frequently inspected and their products are tested for strength and freedom from infection by the hygienic laboratory of the Public Health and Marine Hospital Service, at Washington. Since this law went into effect a marked improvement in the character of the vaccine virus on the market has been observed. In cases vaccinated more good takes are obtained and fewer infected arms are seen.

In accordance with an additional regulation issued by the secretary of the treasury, March 13, 1906, each and every lot of vaccine virus must be examined bacteriologically by the manufacturer to determine its freedom from pathogenic micro-organisms, and a special examination is required of each and every lot to determine the absence of tetanus. Permanent records of these examinations are also required.

How and When to Vaccinate.—Infants of any age may be vaccinated if smallpox is prevalent. If there is no danger of exposure to the disease, vaccination should be delayed until the child is from four to six months of age—in sickly babies it may be delayed until the child is one year old.

The best place to vaccinate a baby is on the outer side of the left leg, about three or four inches below the knee. All right-handed mothers and nurses carry the child upon their left arms. This brings the vaccination sore away from the body of the nurse and in little danger of being hit or rubbed. The leg is to be chosen rather than the arm when vaccinating children, as the abundant lymphatics of the groin better control the inflammatory reaction following vaccination than the relatively fewer lymph nodes in the axilla. In female children the leg should also be chosen, as scars upon the arm are often unsightly. In right-handed male adults the left arm is the site usually chosen for vaccination, at a spot on the outer side of the arm, five or six inches below the top of the shoulder.

The place chosen for vaccination should be well scrubbed with sterile soap and water, a soft sterilized brush being used. After scrubbing, wash off with alcohol and allow skin to dry. A fine cambric needle mounted in a short wooden handle or a small cork is the best scarifier. The point of the needle is sterilized by passing it through the flame of an alcohol lamp. The spot upon the arm or leg selected should be cross-scratched over a surface about half the size of a dime. No blood should be drawn. It is sufficient if a small amount of serum appears. Upon this surface is spread the contents of one tube of glycerinated vaccine virus, which should be allowed to dry in before any dressing is applied. Then apply a shield or a simple dressing of sterile gauze held in place by two narrow strips of zinc oxide adhesive plaster.

After-care.—This first dressing, if not soiled, need not be removed

until the "take" occurs, on the third or fourth day. The skin around the "take" is generally reddened and inflamed and burns and itches. This should be smeared over with an ointment of zinc oxide and a sterile dressing reapplied. If signs of infection of the "take" appear, a wet dressing of warm $\frac{1}{1000}$ bichlorid of mercury solution, frequently changed, should be applied. Great care must be taken to avoid infection of the vaccination wound, and protective dressings should be used until healing takes place.

What is a Good Take?—It is hard to verbally describe a good take. The physician doing the vaccination should see and pronounce upon each case.

What is a Good Scar?—"A perfect scar is round or oval, below the level of the skin about it, with well-defined margins, pitted or reticulated, and looks as though it had been stamped into the skin. Large flat scars are not signs of a good take, but of infection of the vaccination wound; large pits about the edges of a scar are a good sign of a take; the smaller pits scattered over the surface of a large flat scar are generally the dilated mouths of hair follicles and sebaceous glands."*

Revaccination.—A vaccinated person is protected from smallpox in all cases for a period of six or seven years, in many cases for a far longer time. Children should be revaccinated at the age of ten or twelve years. The compulsory-vaccination law of the German empire requires vaccination of every child before the end of the year following the year of its birth and revaccination during the twelfth year. After a second successful take revaccination is not necessary, unless in time of epidemic of smallpox or in those directly exposed to the disease, when revaccination from time to time is a wise precaution against infection.

OPPOSITION TO VACCINATION.

Opposition to vaccination rests on five fundamental declarations:

1. It is dangerous. 2. It is useless. 3. It is an invasion of the right of the individual. 4. Doctors favor it for the fee for vaccinating. 5. All statistics about smallpox are false.

1. *The Dangers of Vaccination.*—The dangers of vaccination exist at present chiefly in the minds of the opponents of vaccination. The chief source of danger remaining is an accidental infection of the wound caused by the vaccination. In this a vaccination wound but shares in the danger to any wound of infection. This in vaccination wounds amounts to one case of infection with fatal results in 65,000 vaccinations. Voight† reports 2,275,000 vaccinations in Germany, with a total of thirty-five deaths. Recently he reports a series of 100,000 vaccinations with but one death. Hodgetts reports 40,000 vaccinations done in the province of Ontario, Canada, without a death. Therefore, while we do not deny that there remains some danger to life in vaccination, we claim that with the exercise of due care it may be reduced to a point where vaccination is far less dangerous than the extraction of a tooth or the taking of an anæsthetic.

2. *It is Useless.*—This statement is based largely on the fact that

* Adapted from Welch and Schamberg.

† Voight. History of Smallpox and Vaccination, 1901.

vaccinated persons do have smallpox. That we do not deny. The protection of vaccination becomes exhausted, and the disease is contracted, or a person is exposed to smallpox, is vaccinated, and has the disease in spite of the vaccination. In Prussia, between the years 1847 and 1873, vaccination was voluntary, and only a small part of the population was vaccinated, and during these years there died of smallpox an average of 42.1 persons per year per each 100,000 of the population. In 1873 a compulsory-vaccination law was passed and enforced, and from 1874 to 1901 there died of smallpox a yearly average of 1.3 persons per each 100,000 of population. Roughly estimated, deaths from smallpox were forty times more frequent before than after vaccination became compulsory. The claim that improved sanitation has reduced the death rate from smallpox cannot be proved. Austria is practically as far advanced in sanitation as Prussia, but has no compulsory-vaccination law, and smallpox is widely prevalent and as fatal as ever. There has never occurred a case of smallpox in a person recently vaccinated successfully. The attendants at smallpox hospitals are vaccinated and revaccinated from time to time, and smallpox is unknown among those so protected.

At the Highgate Hospital near London, where hundreds of smallpox cases are treated, but one attendant in the past sixty years has taken smallpox, and that attendant was a gardener who was not vaccinated because he did not come in contact with the patients. In Boston during the 1900-1903 epidemic of smallpox no attendant at the various smallpox hospitals took the disease. Facts as to reduction of the death rate and immunity to the disease might be multiplied indefinitely, but enough has been said to prove that vaccination does protect. Even in those contracting smallpox years after having been vaccinated a certain factor remains which modifies the virulence of the disease and makes the death rate far lower than in the unvaccinated. The mortality among the vaccinated is as 1 to 7 among the unvaccinated, as shown by the following table from Reports of British Royal Vaccination Commission:

| | Cases. | Deaths. | Per cent. |
|--------------------|--------|---------|-----------|
| Vaccinated | 8,744 | 461 | 5.0 |
| Unvaccinated | 2,321 | 822 | 35.1 |

3. *It is an Invasion of the Right of the Individual.*—There is no answer to this argument if its premise be granted that the individual has a right to do as he pleases. This may be granted if the individual lives alone and comes in contact with no other human being. Life in communities invades and restricts the right of the savage, and community life is impossible on any other terms. The police power of a community rests on either the public-nuisance or the public-welfare ideas in common law and constitutional law; *i. e.*, an individual may not maintain a public nuisance and group of individuals may act together for the public welfare. Therefore we find to-day the savage rights of the individual lessened in number and invaded on every hand. Compulsory-vaccination laws, where they exist, have been upheld unanimously by all courts of appeal before which they have been tested, and the right of the community to enforce vaccination for the public welfare has been established. The individual who in exercising his right to do as he pleases contracts

smallpox is conveyed to a pest-house as a public nuisance, and his family are quarantined and vaccinated for the public good.

4. *Doctors Favor it for the Fee they Get for Vaccination.*—This trifling argument may be answered by the statement that vaccination is performed free of charge by government officials, and the cost thereof is borne by the city or state wherever vaccination is compulsory.

5. *All Smallpox Statistics are False.*—Whether or not records are kept, smallpox does exist and kills and scars its victims, and the fact of its existence and its danger remains, even if the disease is disguised under the name of measles, chicken-pox, Philippine itch, or any other designation.

CONCLUSION.

During the past five years smallpox in the United States has shown a steady and gratifying decrease. In 1902 there were reported 54,014 cases with 2083 deaths; during 1906 there were reported 12,503 cases with 90 deaths. This decrease has doubtless been brought about by increased vigilance on the part of state and national authorities and the wide dissemination of information in regard to the prevention of the disease. Many cities and states have enacted ordinances requiring the vaccination of all children before they are allowed to attend the public schools. In Germany, where vaccination is compulsory and universal, during the year 1906 there were, according to reports received by the Public Health and Marine Hospital Service, in the whole empire but twenty-six cases of smallpox with five deaths, and these cases were largely imported from neighboring countries, where smallpox is prevalent and unchecked by general vaccination. The experience of Germany, where compulsory vaccination has been in force for thirty years, proves conclusively that smallpox as existing in the United States is entirely unnecessary, and vaccination and revaccination cannot be too strongly urged as the only means of removing this pest from our midst.

THROUGH NATURE UNTO GOD.

God is revealed through Nature's varied forms;
The whole Creation shows His majesty;
The earth attests His power and His might,
His love of beauty and of harmony.

And Nature yields herself most willingly
To creature comforts; and to man's desires,
Save when the ruthless hold of Mammon's grasp,
His gratitude forgetting, greed inspires.

Till, reared aloft like Babel towers planned,
A hideous blur on Nature's landscape fair,
A struggling city pants, and throbs, and thirsts,
Bereft alike of earth, of sky, of air.

Walled in by granite, human hearts and hopes
Are sacrificed to worldly pomp and powers;
And little children doomed to pale and die,
Without a sight of grass, or trees, or flowers.

Not up through heights of architectural steps
Shall weary feet, repentant, long to trod;
But paths by waters still and pastures green,
Will lead us back through Nature unto God.

—Berta Alexander Garvey, Topeka, Kan.

BULLETIN

OF THE

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No. 4.

APRIL, 1908.

VOL. IV.

Milk
Stands next
To bread in importance
As a food supply, but much
Of our milk is unfit for food
By reason of dirt and filth of various kinds and names.

A confidential tip—The so-called "joint drug-store" will be required to literally comply with the Kansas food and drugs law.

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Water Survey, No. I, page 107.

VITAL STATISTICS

Reported to the Kansas Board of Health for March, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|----------------------------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|-----------|------------|-----------|-------------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| The State...total, March, 1907..... | 119 76 | 72 52 | 52 28 | 14 9 | 67 106 | 7 13 | 206 81 | 6 3 | 697 273 | 213 8 | 381 1356 | 5 8 |
| Allen | 2 | 0 | 6 | 0 | 0 | 0 | 5 | 0 | 6 | 0 | 0 | 0 |
| Anderson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| †Barber | | | | | | | | | | | | |
| Barton | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Bourbon | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 14 | 0 | 0 | 0 |
| Brown | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Butler | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Chase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| *Chautauqua | | | | | | | | | | | | |
| Cherokee | 3 | 3 | 0 | 0 | 4 | 0 | 1 | 0 | 7 | 0 | 31 | 0 |
| Cheyenne | 1 | 1 | 0 | 0 | 4 | 1 | 12 | 2 | 3 | 0 | 0 | 0 |
| †Clark | | | | | | | | | | | | |
| Clay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Cloud | | | | | | | | | | | | |
| Coffey | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 19 | 0 |
| Comanche | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Cowley | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Crawford | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 27 | 0 | 0 | 0 |
| Decatur | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Dickinson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Doniphan | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 1 | 0 | 0 |
| Douglas | 4 | 4 | 1 | 0 | 1 | 1 | 1 | 0 | 8 | 0 | 5 | 0 |
| Edwards | | | | | | | | | | | | |
| †Elk | | | | | | | | | | | | |
| Ellis | 0 | 0 | 0 | 0 | 3 | 0 | 12 | 0 | 0 | 0 | 1 | 0 |
| Ellsworth | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| †Finney | | | | | | | | | | | | |
| Ford | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Franklin | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| †Geary | | | | | | | | | | | | |
| †Gove | | | | | | | | | | | | |
| Graham | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 6 | 0 | 0 | 0 |
| Grant | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gray | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| Greeley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greenwood | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 15 | 0 | 2 | 0 |
| Hamilton | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 4 | 0 |
| †Harper | | | | | | | | | | | | |
| Harvey | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 |
| †Haskell | | | | | | | | | | | | |
| Hodgeman | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Jefferson | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 23 | 0 |
| Jewell | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 2 | 0 |
| †Johnson | | | | | | | | | | | | |
| Kearny | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 0 |
| Kingman | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| †Kiowa | | | | | | | | | | | | |
| Labette | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Lane | | | | | | | | | | | | |
| Leavenworth | 1 | 1 | 0 | 0 | 2 | 0 | 5 | 0 | 12 | 0 | 3 | 0 |
| †Lincoln | | | | | | | | | | | | |
| Linn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| Logan | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 |
| Lyon | 6 | 4 | 0 | 0 | 0 | 0 | 6 | 1 | 16 | 0 | 54 | 0 |
| Marion | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Marshall | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| McPherson | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 14 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|-----------|-----------|-----------|----------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| †Meade..... | | | | | | | | | | | | |
| *Miami..... | | | | | | | | | | | | |
| Mitchell..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Montgomery..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 1 | 0 |
| Morris..... | 2 | 1 | 1 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 |
| †Morton..... | | | | | | | | | | | | |
| Nemaha..... | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 36 | 0 | 1 | 0 |
| Neosho..... | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| †Ness..... | | | | | | | | | | | | |
| Norton..... | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 0 | 0 |
| Osage..... | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 0 | 6 | 1 |
| Osborne..... | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| †Phillips..... | | | | | | | | | | | | |
| Pottawatomie..... | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 2 | 0 | 1 | 0 |
| Pratt..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| †Rawlins..... | | | | | | | | | | | | |
| Reno..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 16 | 0 | 4 | 0 |
| Republic..... | 5 | 3 | 0 | 0 | 1 | 0 | 3 | 0 | 78 | 0 | 0 | 0 |
| Rice..... | 10 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 50 | 0 |
| *Riley..... | | | | | | | | | | | | |
| Rooks..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 0 | 4 | 0 | 50 | 0 |
| Russell..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Saline..... | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 15 | 0 | 1 | 1 |
| Scott..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Sedgwick..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| Seward..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 |
| Shawnee..... | 2 | 2 | 0 | 0 | 1 | 0 | 17 | 0 | 1 | 0 | 2 | 0 |
| Sheridan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 |
| Sherman..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| *Smith..... | | | | | | | | | | | | |
| Stafford..... | 1 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| †Stanton..... | | | | | | | | | | | | |
| †Stevens..... | | | | | | | | | | | | |
| Sumner..... | 2 | 2 | 0 | 0 | 4 | 0 | 2 | 0 | 8 | 0 | 0 | 0 |
| Thomas..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 |
| Trego..... | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 8 | 0 | 0 | 0 |
| Wabaunsee..... | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 17 | 0 | 5 | 0 |
| Wallace..... | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 1 | 2 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | 0 |
| Wilson..... | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| Woodson..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 7 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 31 | 0 | 0 | 0 |
| Coffeyville..... | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 0 |
| Kansas City..... | 20 | 18 | 15 | 3 | 8 | 0 | 7 | 0 | 42 | 0 | 1 | 0 |
| Leavenworth..... | 0 | 0 | 9 | 2 | 6 | 0 | 6 | 0 | 3 | 0 | 27 | 1 |
| Parsons..... | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 14 | 0 | 4 | 0 |
| Pittsburg..... | | | | | | | | | | | | |
| Topeka..... | 4 | 3 | 0 | 0 | 7 | 0 | 23 | 0 | 18 | 0 | 4 | 0 |
| Wichita..... | 2 | 2 | 1 | 1 | 1 | 0 | 6 | 0 | 78 | 0 | 2 | 2 |
| State Institutions. | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

We might stand for a little clean water in our milk, but we draw the line on the addition of so much cow faeces, particularly when they contain tubercular germs.

Smallpox is on the increase. Vaccinate!

FOOD ANALYSES No. XIV.

By E. H. S. BAILEY, Ph. D., Chemist for Board of Health, and Prof. H. L. JACKSON, Food Analyst.

VINEGARS.

No. 7060. Cider Vinegar. Manufactured by Emrick Vinegar and Pickle Company, Kansas City. Sample taken January 28, 1908, by A. G. Pike, inspector. Illegal.

No. 7062. Passed as a colored distilled vinegar.

No. 7063. Sample purchased of M. B. Foster, Columbus, by A. G. Pike, inspector. This was sold by the retailer as a double-strength vinegar at forty cents a gallon straight, or adding one-half water at twenty cents. This was practically a standard vinegar, and not double strength. It was sold as vinegar, which means, if not defined, cider vinegar, and as it was evidently a colored distilled vinegar it is illegal.

No. 7064. Passed as distilled uncolored.

No. 7065. Cider Vinegar. Purchased January 28, 1908, of J. N. Lawler, Farlington, by A. G. Pike, inspector. Illegal.

No. 7073. Vinegar. Purchased November 12, 1907, of J. S. Strickler, Ramona, Kan., by A. G. Pike, inspector. Branded United States standard. Misbranded.

No. 7074. Country Vinegar. Manufacturer, E. U. Jacobs. Purchased February 12, 1908, of A. G. Green, Ramona, Kan., by A. G. Pike, inspector. Illegal.

No. 7132. Vinegar. Marked Regal Family Vinegar Compound. Purchased of J. E. Kassouth, Pittsburg, Kan., March 20, 1908, by A. G. Pike, inspector. Illegal. Misbranded.

No. 7143. Vinegar. Passed as white distilled vinegar.

No. 7059. Vinegar. Illegal.

No. 7149. Label: Guaranteed Standard Fancy Table Vinegar. Sold by B. B. Johnson Grocery Company; retailer, R. O. Hallam, Crestline, Kan. Purchased by A. G. Pike, inspector. Sample is labeled "caramel flavor," which is misbranding, as it is an attempt to cover up the fact that caramel is used as coloring material. Sample also deficient as a standard vinegar. Illegal.

No. 7045. Label: Country Vinegar. Bought of a farmer at Anna, Kan. Retailer, W. M. Swain, Anna, Kan. Sample deficient as compared with standards for cider vinegar. Illegal.

EXTRACTS.

Flavoring extracts may be divided into two classes: those like lemon, orange, clove, peppermint, wintergreen, almond, etc., which

are composed of alcoholic solutions of the oils of these substances; and second, those which are purely artificial products and are made from artificial flavors compounded from chemicals in the chemical laboratory. These chemicals are organic alcohols, ethers, and oils, which, blended in the right proportion, imitate the flavor of the fruit. Under this latter class fall the flavors like that of strawberry, raspberry, pineapple, cherry, banana, pear, rose, peach, plum, apricot and quince. These are put on the market containing some bright coal-tar dye to make them look attractive, some alcohol to aid in holding the artificial ethers, etc., in solution, and perhaps some perfume to aid in simulating the fruit flavor.

Some of these are called "pure concentrated extracts," which is obviously a false and misleading term, as such substances are never concentrated, and there is no standard above which the "concentrated extract" is supposed to go. They cannot be considered *pure* when they are artificial products containing added color which is not stated. Moreover, they are never *extracts of the fruit*, as the label would imply. The cost of manufacture is very slight, and the price charged usually out of proportion to the true flavoring value.

Six samples of lemon extract, Nos. 703, 3170, 3177, 5035, 5091, and 7042, were found to come within the requirements of the law as regards oil of lemon content and label, and were passed.

No. 862. Lemon Extract. Purchased by J. F. Tilford, inspector. Passed.

No. 7042. Lemon Extract. Purchased by A. G. Pike, inspector. Passed.

No. 7066. Red Line Lemon Extract. Manufacturer, Jones Bros., Eldorado Springs, Mo. Purchased of Zimmerman Mercantile Company, Sherwin, Kan., by A. G. Pike, inspector. Contains no oil of lemon. Illegal.

No. 866. Essence of Lemon. Purchased January 22, 1908, of Paul Orlopp, Burlingame, Kan., by J. F. Tilford, inspector. Manufacturer, McPike Drug Company, Kansas City, Mo. Found to contain but 2.26 per cent. oil of lemon. Illegal.

No. 7147. Lemon Extract. Label: Purity Triple Flavor. Manufacturer, Purity Chemical Company, Chicago, Ill. Purchased by A. G. Pike, inspector, of Flemny Coal Company, Skidmore, Kan. Contains but 5.4 per cent. oil of lemon; therefore it is illegal, as it is marked "triple," and a triple extract should contain 15 per cent.

No. 7067. Vanilla. Label: Jones Red Line Artificial Vanilla

Flavor. Manufacturer, Chas. Jones, Sheldon, Mo. Purchased by A. G. Pike, inspector, of Zimmerman Mercantile Company, Sherwin, Kan. It is misbranded, as the bottle is not labeled the same as the carton. Label should state "artificial vanilla flavor, artificially colored."

No. 3172. Orange Extract. Passed.

No. 985a. Sample Oil of Lemon. Suspected of not being a true lemon oil. Passed.

No. 1024. Cinnamon Essence. Purchased of the U. P. Pharmacy, 619 N. Kansas avenue, Topeka, by J. F. Tilford, inspector. Label: "Essence of Cinnamon. Fruit coloring." Sample is deficient in oil of cinnamon; contains only a trace, and is illegal, since coal-tar dye is present. Coal-tar dye is present and is called fruit color.

No. 5110. Raspberry Flavor. Label: "Pure Concentrated Extract of Artificially Colored Imitation Raspberry." Purchased by John Kleinhans, inspector. Misbranded.

No. 7033. Strawberry Flavor. Label: Yale Brand Absolutely Pure Flavor of Imitation Strawberry. Purchased November 9, 1907, of J. C. Fyle, Comiskey, Kan., by A. G. Pike, inspector. Manufacturer, Steinwander & Stoffregen Coffee Company, St. Louis, Mo. The words "absolutely pure" have no meaning in this class of goods. Misbranded.

No. 5074. Artificial Banana Flavor. Label: Gillett's Artificial Banana Extract. Purchased by John Kleinhans, inspector, of Shirley Bros., Chanute, Kan. Manufacturer, E. W. Gillett, Chicago. It is misbranded, as no genuine extract of banana, but only an artificial flavor, can be made, and as there is no standard there is no meaning to the term "artificial" as here used.

FOOD ACCESSORIES.

No. 3207. Ice Cream Powder. Received through Dr. S. J. Crumbine, chief food inspector. Upon examination this was shown to be practically gum tragacanth.

No. 5057. Sweet Relish. Label: Wilco Brand, Celebrated Table Luxuries. Manufacturers, Williams Bros. Company, Detroit, Mich. Presence of alum not stated. Illegal.

No. 5088. Piccalilli. Passed.

No. 7072. Standard High Grade Catsup. Manufacturers, Exley, Watkins & Co., Wheeling, W. Va. Purchased by A. G. Pike, inspector, of A. S. Strickler, Ramona, Kan. Sodium benzoate not declared.

No. 5123. Best Value Tomato Catsup. Brand, Our Winner.

Manufacturer, Chautauqua Preserving Company, Irving, N. Y. Purchased November 25, 1907, of Lievergood & Must, Garden City, Kan. Presence of sodium benzoate not declared. Illegal.

No. 5090. Tomato Catsup. Was not found preserved, and passed.

No. 3169. Gold Band Tomato Catsup. Anderson Canning Company; retailer, Fennup, Garden City, Kan. Added color not found. Small amount of benzoic acid found. Illegal.

No. 5065. Capers. Passed.

No. 5032. Mince Meat. Purchased by John Kleinhans, inspector. Passed as free from preservatives.

No. 5033. Mince Meat. Purchased by John Kleinhans, inspector. Passed as free from preservatives.

Four samples of olive-oil have been examined: Nos. 5037, 5038, 5069 and 5072 were found to come within the state and national requirements.

BAKED BEANS.

Nos. 5090, 5137, 5138, 5139, baked beans, were not found to contain preservatives and were passed; also, the three samples, Nos. 5040, 5041, and 5106, passed.

No. 5029.. Walker's Pork and Beans with Tomato Sauce and Chilli Gravy. Manufacturer, T. B. Walker Manufacturing Company, Austin, Tex.; jobber, Theo. Poehler Mercantile Company, Lawrence, Kan. Benzoic acid found in small amount, which should have been declared. Illegal.

No. 5031. Baked Beans with Tomato Sauce. "Guaranteed free from adulteration." Polk's Best. Manufacturers, J. T. Polk Company, Greenwood, Ind. A slight amount of benzoic acid found. Illegal.

BEVERAGES.

No. 3149. "All Hail" Fermented Malt Liquor. Warranted to contain less than 2 per cent. alcohol. Val Blatz Brewing Company, Milwaukee. This sample contains 1.95 per cent. of absolute alcohol by volume.

No. 3140. Rochester Malt Ale. Rochester Brewery, Kansas City, Mo. Sample contains 2.23 per cent. of absolute alcohol by volume.

No. 810. "Ino." Label: "Healthful, sparkling, non-intoxicating beverage." Manufacturers, Anheuser-Busch Company. This contains 2.7 per cent. of alcohol by volume.

No. 7163. Hop Tea, purchased April 15, 1908, of Wilber Irby,

Chetopa, by A. S. Pike, inspector. No label, but bought as Hop Tea. Contains 2 per cent. of alcohol by volume.

No. 3286. Purchased April 17, at Hiawatha, Kan., by Dr. B. J. Alexander, of John Bohner. Marked "Quaker Temperance Beer." Controlled by Temperance Beverage Company, Chicago. This sample is practically free from alcohol.

DRUG ANALYSES No. XI.

LAWRENCE, KAN., April 8, 1908.

The report herewith submitted includes a number of items, consisting of analyses of various ethyl alcohols and crude alcohols, the latter consisting of whiskies, mainly, collected by inspectors of the Board of Health, and received at the laboratory for examination; a report of various medicinal articles, collected by your drug inspector at Parsons, Kan., and other items.

Before reporting upon the alcohols, it may be well to recall the open letter to pharmacists and dealers in alcohol, published in the February BULLETIN, page 44, in which it was strongly urged that the dealers send into the state 190 proof alcohol, instead of 188 proof, as has been the custom on the part of some dealers; the former strength only being the U. S. P. alcohol. It was somewhat surprising to the director of your laboratory that any objection should have been made on the part of dealers or manufacturers to this attempt at holding to the official standard. A representative of one of the manufacturers stated that it would be practically impossible for the alcohol distillers to supply such an alcohol in any very large quantities, such as a general demand would create; that it would require a new adjustment and added expense for new apparatus in order to supply an alcohol of such percentage; that all of the distilleries were adjusted to the manufacture of the 188 proof, and anything above this maximum would entail special treatment, etc.

In view of this statement I was requested to make investigations in regard to that matter, as the Board of Health have adopted the policy of not holding to any requirement that would be unreasonable or impracticable. The questions submitted to the manufacturers related to the following points:

1. Is there likely to arise any difficulty in supplying the demand for the official alcohol?
2. Is there any difference in quality (as to impurities) of the 188 and 190 proof?

3. What would be the probable difference in price? Would the price be any great obstacle to the replacement of the 188 proof by the 190 proof?

The following replies were received:

The Fleischmann Company, Cincinnati, stated (1) that there is no difficulty in supplying the large demand; (2) there is no difference in quality of alcohol; (3) there would be practically no difference in price of alcohol.

The Corning Company, Peoria, Ill., gave a reply substantially the same.

Clarke Bros. & Co., Peoria, Ill., state:

"1. There would be considerable difficulty in supplying the demand for what you consider U. S. P. alcohol, or official alcohol, for the reason that the state of Kansas is the only state that has made this demand; consequently we would have to distil the alcohol to a higher proof and hold it for that specific territory.

"2. There would be absolutely no difference in the quality between the 188 proof alcohol and the 190 proof alcohol, any more than one would be higher proof than the other.

"3. The 190 proof alcohol would contain practically the same impurities as the 188 proof; there could be no conceivable difference."

The Michigan Chemical Company, Bay City, Mich., state:

"The internal revenue laws work on a basis of 100° proof, which is equal to 50 per cent. volume; therefore 94.9 per cent. by volume would be 189.8° proof, or practically 190° proof. The difference between 94.9 per cent. by volume, as required by U. S. P. and 188° proof is therefore 2° of proof in strength.

"However, there is no difference in the quality between alcohol of 188° proof and alcohol of 190° proof, as all the alcohol manufactured is originally made at about 192° and then reduced with distilled water to the requirements of the trade, say 190° or 188° proof, as the case may be.

"We make, however, two different grades of quality—one called cologne spirits, which is the purest alcohol obtainable, and one called alcohol. Cologne spirits is usually put up at 190° proof, or 95 per cent. by volume, and would therefore come within the requirements of the U. S. P. Alcohol can also be put up at this strength, and if the strength is the only qualification required by the U. S. P., such alcohol would also come within its requirements. It is, of course, not as pure as cologne spirits.

"The difference in price between cologne spirits and alcohol is one cent per proof gallon. The difference between 188° proof and 190° proof alcohol is found by multiplying the market quotation per proof gallon by 2, the difference in degree of proof."

The Atlantic Distilling Company, Boston, Mass., state:

"1. We can without any difficulty supply any reasonable orders

for most any quantity of either 188° or 190° alcohol, and of a quality which will conform with the United States pure food and drug act.

"2. There is very little difference in the quality of our 188°, 94 per cent. alcohol, and our 190°, 95 per cent. alcohol. As a rule, our alcohol is run into the receiving cisterns at 190° or above. When we wish to draw it at 188°, we simply add enough distilled water to reduce the proof as desired.

"3. Our answer to this question is indicated by our answer to No. 2; practically the only difference being on account of the difference in the quantity of the distilled water added to produce the lower percentage of alcohol.

"We do not consider that there is any practical difference between alcohol of 188° and 190°. We make no difference in the price per proof gallon, but there is a difference in the price per wine gallon of three cents. This is mostly on account of the internal revenue tax, which is \$2.068 per wine gallon on 188° and \$2.09 per wine gallon on 190°."

From the various pharmaceutical manufacturing houses we have received practically the same replies, which replies will be indicated in the following letter from one house, one member of which is a member of the committee of revision of the United States Pharmacopœia:

"It would not cost an undue amount to make a 190 proof alcohol. Distillers supplying the wholesale trade in this city *regularly furnish* 190 proof alcohol, and the only increase in price they charge is just the amount more *internal revenue* they have to pay on 190 proof alcohol as against 188 proof. The distillers have to pay the government a tax of \$1.10 on the proof gallon. If the alcohol is 188 proof, this tax amounts to \$2.068 per gallon; and on alcohol 190 proof it amounts to \$2.09 per gallon. The present market price in barrels for 190 proof is \$2.61 per gallon, and 188 proof alcohol can be obtained at \$2.58½ per gallon."

From one of the manufacturers we have the following contribution:

"We seem to have had very little trouble in procuring alcohol of the strength specified in the United States Pharmacopœia, eighth revision. In looking over our records of alcohol purchased for the past twelve months, we find that the assays ran as follows:

| 95 1 per cent. absolute by volume. | | | | | 95.0 per cent. absolute by volume. | | | | |
|------------------------------------|---|---|---|---|------------------------------------|---|---|---|---|
| 94.9 | " | " | " | " | 94.9 | " | " | " | " |
| 94.6 | " | " | " | " | 95.0 | " | " | " | " |
| 95.2 | " | " | " | " | 95.0 | " | " | " | " |
| 94.7 | " | " | " | " | 94.9 | " | " | " | " |
| 95.1 | " | " | " | " | 95.0 | " | " | " | " |
| 95.1 | " | " | " | " | | | | | |

"The above represents consignments of one, two and perhaps three car-loads each, and the assays are the results obtained by combining a dozen or more samples from the same consignment.

"In this connection we would suggest that you will undoubtedly be able to get a great deal of light in a practical way by discussing the matter directly with some other large firms who supply the greater portion of alcohol in the United States. It naturally follows that if these firms state that they can and are supplying the official alcohol, testing 91.9 per cent. absolute by volume, the druggists should have no difficulty in obtaining it."

Analyses of the following alcohols, collected recently, are herewith reported, as the Board has directed :

| Lab. No. | NAME OF SUBSTANCE. | Name of pharmacist. | City. | Alcohol by volume. |
|----------|--------------------|---------------------------------------|-------------------|--------------------|
| 1842 | Alcohol | United Drug Company..... | Pleasanton..... | 94.80% |
| 1844 | " | E. W. Bartleson | " | 94.80 |
| 1846 | " | Louis Smith | Prescott | 93.60 |
| 1848 | " | L. A. Lhuillier | " | 94.40 |
| 1850 | " | W. H. Broadwell..... | La Cygne..... | 94.20 |
| 1852 | " | W. J. Ellsworth | " | 93.70 |
| 1870 | " | R. W. Stephens..... | Hewins..... | 93.02 |
| 1872 | " | H. G. Jones..... | Independence..... | 93.14 |
| 1878 | " | The Pugh Drug and Stationery Company, | " | 93.67 |
| 1881 | " | I. G. Fowler..... | " | 93.81 |
| 1882 | " | C. W. Fadler..... | " | 92.88 |
| 1886 | " | F. C. Fair..... | " | 94.12 |
| 1888 | " | J. S. Lang & Sons | Coffeyville..... | 94.60 |
| 1901 | " | Wm. Port..... | Altona..... | 94.40 |
| 1906 | " | F. F. Frye..... | " | 94.60 |
| 1908 | " | Pierce Bros. & Eson | Neodesha..... | 94.20 |
| 1908 | " | Owl Drug Company..... | " | 94.40 |
| 1980 | " | Geo. T. Brown..... | Independence..... | 94.60 |
| 1932 | " | C. L. McAdams..... | " | 93.60 |
| 1935 | " | Frank F. Yoe..... | " | 94.60 |
| 1953 | " | H. T. Clifton..... | Paola..... | 94.80 |
| 1964 | " | McGrath & Myer..... | " | 94.80 |
| 1955 | " | P. H. Grimes..... | " | 94.80 |
| 1956 | " | W. H. Gatlin..... | " | 93.60 |
| 1967 | " | G. H. Hall..... | " | 94.40 |
| 1968 | " | Johnson & Co..... | Pomona..... | 94.70 |
| 1980 | " | A. F. Meek..... | Osawatomie..... | 94.60 |
| 1961 | " | A. W. Youngberg..... | " | 94.60 |
| 1962 | " | H. H. Reed..... | " | 94.90 |
| 1963 | " | Miss O. G. Allen, State Hospital..... | " | 93.80 |
| 1964 | " | W. H. Ringer..... | Paola..... | 94.90 |
| 1965 | " | M. A. Rex (per King)..... | Fontana..... | 94.80 |

No. 2234, drug laboratory (inspector's No. 3535). Durkee's Ground Ginger. Contained 3.25 per cent. ash. The substance was free from foreign matter.

Laboratory No. 1653, Durkee's Ginger, previously reported. Was probably from a broken package, and therefore unofficial.

STATE WATER SURVEY, No. I.

By E. H. S. BAILEY, Ph. D., Chemist, and F. W. BUSHONG, Ph. D., Assistant.

LAWRENCE, KAN., April 11, 1908.

Ever since the passage of the Kansas water and sewage law (Senate bill 242, session 1907), the water-analysis laboratory at the State University has been engaged in the analysis of the waters of the larger streams of the state. The result of these analyses from

numerous stations (Bull. St. Bd. Health, vol. 3, p. 76) will be published as soon as they have been compiled by the assistant hydrographer of the United States Geological Survey, Mr. H. N. Parker.

Samples of the waters have been taken for a full year in most cases, and will represent very fairly the mineral composition of the rivers of Kansas in various stages of flood and drought.

In addition to the above work the laboratory has, from time to time, made examinations of city supplies in the furtherance of the work contemplated by the Kansas water and sewage law (Bull. St. Bd. Health, vol. 3, p. 71).

Some of the more important of these analyses are given in the table below. The results thus obtained have assisted the sanitary engineer in the location of a proper source of supply, and have been of value to the cities in obtaining pure and satisfactory water. In some cases numerous prospect borings have been made before a city water was obtained. Bacterial examinations have also been made by Professor Barber whenever it seemed desirable.

SANITARY ANALYSIS OF CITY WATER SUPPLIES.

| No..... | CITY. | Date. | Nitrogen as free ammonia..... | Nitrogen as albuminoid ammonia..... | Nitrogen as nitrites..... | Nitrogen as nitrates..... | Solids..... | Loss..... | Chlorine..... |
|---------|-------------------------|----------|-------------------------------|-------------------------------------|---------------------------|---------------------------|-------------|-----------|---------------|
| 1 | Bonner Springs..... (a) | 9 5 07 | 0.590 | 0.058 | 0.050 | 6.400 | ..... | ..... | 29 |
| | (b) | 10 22 07 | 0.052 | 0.136 | 0.002 | 10.100 | ..... | ..... | 5 |
| 2 | Caney..... | 2 26 08 | 0.102 | 0.415 | 0.001 | 0.480 | ..... | ..... | 34 |
| 3 | Cherryvale..... (a) | 2 26 08 | 0.160 | 0.616 | high | 0.850 | ..... | ..... | 12 |
| | (b) | 3 30 08 | 0.186 | 0.226 | 0.030 | 0.600 | ..... | ..... | 29 |
| | (c) | 3 30 08 | 2.110 | 0.706 | 0.250 | 1.600 | ..... | ..... | 82 |
| 4 | Clifton..... (a) | 7 23 07 | 0.076 | 0.024 | trace | 1.530 | 312 | 40 | 18 |
| | (b) | 7 23 07 | 0.068 | 0.240 | trace | 0.158 | 390 | 50 | 22 |
| 5 | Delphos..... | 2 21 08 | 0.904 | 0.186 | 0.002 | trace | ..... | ..... | 808 |
| 6 | Ellsworth..... (a) | 7 15 07 | 0.042 | 0.076 | 0.035 | 0.130 | 686 | ..... | 104 |
| | (b) | 7 30 07 | 0.426 | 0.150 | none | 0.034 | 707 | 120 | 107 |
| 7 | Frankfort..... (a) | 9 19 07 | 0.238 | 0.230 | 0.001 | none | ..... | ..... | ..... |
| | (b) | 10 16 07 | 0.084 | 0.070 | none | trace | ..... | ..... | ..... |
| 8 | Fredonia..... (a) | 10 12 08 | 0.080 | 0.172 | none | 0.385 | ..... | ..... | ..... |
| | (b) | 10 17 07 | 0.080 | 0.188 | trace | 0.200 | ..... | ..... | ..... |
| 9 | Fort Scott..... (a) | 2 1 08 | 0.000 | 0.034 | none | 0.230 | 1,800 | 195 | 772 |
| | (b) | 2 1 08 | 0.028 | 0.068 | none | 11.300 | 927 | 115 | 42 |
| | (c) | 2 1 08 | 0.026 | 0.210 | trace | 0.380 | 273 | 25 | 25 |
| 10 | Great Bend..... | 8 31 08 | 0.012 | 0.054 | none | 0.587 | 572 | ..... | 50 |
| 11 | Herington..... | 12 — 07 | 0.132 | 0.180 | none | trace | 2,648 | ..... | 64 |
| 12 | Holsington..... (a) | 8 22 07 | 0.042 | 0.096 | 0.002 | 0.680 | ..... | ..... | 59 |
| | (b) | 8 22 07 | 0.094 | 0.122 | 0.007 | 1.130 | ..... | ..... | 58 |
| | (c) | 8 22 08 | 0.058 | 0.198 | none | 0.040 | ..... | ..... | no |
| 13 | Iola..... | 7 31 07 | 0.180 | 0.316 | 0.005 | 0.225 | 360 | 60 | 10 |
| 14 | Lansing..... (a) | 10 23 07 | 0.164 | 0.306 | 0.002 | 0.250 | 530 | 40 | 14 |
| | (b) | 1 19 08 | 0.026 | 0.144 | 0.000 | 0.000 | 365 | 27 | 10 |
| | (c) | 1 19 08 | 0.118 | 0.230 | 0.003 | 0.160 | 461 | 56 | 22.5 |
| 15 | Lawrence..... | 3 16 08 | 0.064 | 0.485 | 0.002 | trace | ..... | ..... | 78 |
| 16 | Lyons..... | 2 21 08 | 0.006 | 0.150 | 0.006 | 0.210 | ..... | ..... | 100 |
| 17 | Marion..... (a) | 9 30 07 | 0.056 | 0.078 | 0.070 | 1.060 | ..... | ..... | 86 |
| | (b) | 10 17 07 | 0.254 | 0.394 | 0.400 | 12.500 | ..... | ..... | ..... |
| | (c) | 10 17 07 | 0.066 | 0.110 | none | 14.700 | 256 | ..... | 31 |
| | (d) | 10 17 07 | 0.080 | 0.062 | none | 5.200 | ..... | ..... | ..... |
| 18 | Protection..... | 10 12 07 | 0.062 | 0.338 | none | none | ..... | ..... | ..... |
| 19 | Sedan..... | 2 26 08 | 0.070 | 0.290 | 0.001 | 0.800 | ..... | ..... | 12.5 |

1. Bonner Springs.—Proposed city supply.
2. Caney.—Sample from city supply. Water comes from Caney river, and is supposed to be filtered. The source in general is the same as that of the Sedan water, but several creeks draining oil districts enter the stream between the two cities.
3. Cherryvale.—(a) From city hydrant; sample taken after a rain, was very turbid. Water comes from an impounded supply several miles from the city, and is not treated in any way. (b) Water from Drum creek, one-fourth of a mile below possible point of entrance of refinery waste. (c) Sewage effluent of septic tank. No filter beds used.
4. Clifton.—(a) Sample from city supply, 60-foot well in rock. (b) Sample from proposed site of new pumping plant, 34-foot well in gravel.
5. Delphos.—Sample from bored well 116 feet deep, in city park, to be used for general manufacturing and domestic purposes.
6. Ellsworth.—City supply, shallow well in the Smoky Hill bottom; water from underflow. (a) Stood for some time before analysis. (b) Analysis made immediately after water was received.
7. Frankfort.—Samples taken at different times from the same well. (a) Probably contained surface water. (b) Sample taken later from 10-inch well 40 feet deep. Water struck at 25 feet, in deep sand and gravel, seemingly in abundance. Water rises nearly to surface in well, which is cased back to prevent contamination with surface water.
8. Fredonia.—Samples from water-works, not municipal.
9. Fort Scott.—Municipal supply. (a) Artesian well in Bridal Veil park, 902 feet deep. Sample taken from the bottom of the well by inserting a smaller pipe and shutting off upper vein by packing. (b) Gunz shallow well; a possible city supply. (c) Hydrant water which has been treated with iron sulfate and lime after having come from settling basin.
10. Great Bend.—From city supply, not municipal; deep wells, probably striking the second sheet of Arkansas river underflow.
11. Herington.—A number of samples were taken from proposed sources of water supply, but this (No. 11) was from an artesian well 82 feet deep; well cased for 50 feet, and no water was reached till the well was 82 feet deep, when it came with great force, and the flow was continuous. The high solids represent calcium sulfate or gypsum.
12. Hoisington.—(a) Sample from city main. (b) Water from condenser of ice plant. (c) Distilled water as used at ice plant.
13. Iola.—From Neosho river; sample taken opposite pumping station.
14. Lansing.—(a) Sample from supply of state prison; water comes from points driven in bottom in vicinity of Missouri river. (b) From creek that runs by the prison into the Missouri river. Sample was taken above where sewage from prison could reach it. The creek drains a few square miles of mostly grazing country and part of the village of Lansing. This water, on account of insufficient supply, was used temporarily, but was boiled before using. (c) From Missouri river where it flows by the pump-house of the prison. This was also boiled before using.
15. Lawrence.—Most recent analysis of the city supply. This shows higher albuminoid ammonia than ordinarily, as just at this time the basin

- was filled with a growth of green algæ. No bacterial contamination shown. Water comes from points driven in the bottom near the Kansas river, and from wells in the same vicinity.
16. Lyons.—Sample from new city well. Eight-inch well, 60 or 70 feet deep; said to yield 250 gallons per minute. This water comes from the deep-lying gravel below the quicksand; probably connected with the Arkansas river underflow.
 17. Marion.—(a) From proposed city well. Location not satisfactory. (b) Large spring in park, used by residents for drinking water. (c) Abandoned dug well. (d) Second sample from same locality.
 18. Protection.—(3) From driven wells 20 to 40 feet deep. Site of village said to be peculiar in that water does not drain away from it.
 19. Sedan.—City supply, taken from hydrant. Water from Caney river, supposed to have been filtered, but after a rain; was very turbid.

The laboratory will, from this time forward, be able to devote more attention to special problems on the sanitary quality of waters and the disposal of sewage, and will take up especially the contamination of water supplies by industrial waste, etc. A recent investigation in this line on the effect of refinery refuse upon the water of the Caney river has been made, which report follows:

LAWRENCE, KAN., April 3, 1908.

Dr. S. J. Crumbine, Chief Food and Drug Inspector, Topeka, Kan. :

DEAR DOCTOR—This department received on February 17 nine samples of water from the Caney river and its tributaries, with a request that they be analyzed to show the effect of the waste from the oil-refinery at Niotaze, Kan. These samples were accompanied by an affidavit, as follows:

"STATE OF KANSAS, CHAUTAUQUA COUNTY.

"We hereby certify that we took the samples on the day and date on the bottles, and have kept them in our possession till this date.

(Signed) C. D. DEARING, *Twp. Clerk.*
W. D. RILEY."

The source of each sample is carefully stated in section, township and range, but the locality can best be identified by numbers, as follows:

No. 1, from Lake creek, a short distance below the point where the refinery waste is discharged.

No. 2, some distance below this point on Lake creek.

No. 3, Lake creek, a short distance above the point where Birch creek discharges into it.

No. 4, Birch creek, a short distance above the point where it flows into Lake creek.

No. 5, some distance below the point where Birch creek flows into Lake creek.

No. 6, on Birch creek, opposite residence of J. R. Dodson.

No. 7, some distance below said residence.

No. 8, three-eighths of a mile below said residence.

No. 9, from Lake creek above the village of Niotaze, and above the refinery.

Birch creek flows into Caney river about three-fourths of a mile above the point where the water is taken for the Caney water-supply.

With the exceptions of samples Nos. 1 and 9, which were in moving water, we learn that the others were taken from comparatively still water.

The analyses of the waters give us the following results:

| PARTS PER MILLION. | | | | |
|--------------------|---------|----------|-----------|--------------------------------|
| No. | Solids. | Chlorin. | Sulfates. | Acidity est. as sulfuric acid. |
| 1..... | 1,310 | 524 | 474 | 255 |
| 2..... | 1,352 | 589 | 481 | 250 |
| 3..... | 1,313 | 480 | 668 | 410 |
| 4..... | 3,455 | 1,976 | 28 | Neutral. |
| 5..... | 1,397 | 484 | 686 | 402 |
| 6..... | 2,445 | 1,284 | 362 | 137 |
| 7..... | 2,000 | 972 | 870 | 142 |
| 8..... | 1,948 | 968 | 286 | 83 |
| 9..... | 1,363 | 732 | 28 | Neutral. |

From an examination of these results, we learn from No. 9 (Lake creek above the refinery) what would be the natural composition of the water, although it stated that most of the water used at the refinery is pumped from the Caney river, which is distant perhaps one-half mile east. This sample, No. 9, is neutral, and it contains only a small quantity of sulfates. After it receives the refinery waste, the presence of the sulfuric acid is evident, as shown in No. 1, both by the high sulfates and by the acidity, the sulfates being about seventeen times as much as in the unpolluted water. A part of the acidity is neutralized by the water coming in contact with calcium carbonate contained in the water, or in suspension. The difference in different samples may be due to the more or less complete mixing of the waste with the water from the creek.

Birch creek has about the same amount of sulfates as Lake creek above the refinery, but it contains more mineral matter. This fact, from further investigation, is evidently due to a larger quantity of salt in Birch creek than in Lake creek. This water is also neutral before the two streams come together.

Nos. 6, 7 and 8 show a diminishing acidity as well as, in general, a diminishing quantity of sulfates. This is no doubt due to neutralization of carbonate, as the sulfates do not diminish so materially. At the lowest point examined, where sample No. 8 was taken, the water is still acid.

A sample of water taken February 24 by myself from the Caney city water-works showed 135 parts hydrocarbonate alkalinity and 34 parts of chlorin.

A sample of water from Sedan water-works, which supply also came from the Caney river, was taken on the same day by myself, and showed 237 parts of hydrocarbonate alkalinity and 12.5 parts of chlorin.

These two analyses would indicate that the alkalinity of the normal unpolluted water had been cut down by acid waste from 237 to 135, and that there was nearly three times as much salt, which might be due to brine coming in from the oil-wells in the vicinity.

On February 24 samples of the refinery waste were collected by myself. These were taken during a heavy rain, and the waste was mixed with more or less rain-water.

No. 1, taken at the bottom of the hill, showed 172 parts free sulfuric acid.

No. 2, taken some distance above, showed 181 parts.

No. 3, taken farther up the hill, showed thirty parts hydrocarbonate alkalinity. This was probably due to mixture with surface water at this point.

No. 4, which was the sludge taken direct from the refinery, contained 6272 parts.

No. 5, taken from Lake creek at the same time, showed twenty-five parts hydrocarbonate alkalinity. It is evident that samples Nos. 3 and 5 were not samples in which the sludge had been mixed very fully with the water.

We find that Tremann-Gartner, in his book on Water, states that experiments made upon trout with water containing fifty parts of sulfuric acid in a million, for one-half hour, show that the fish would revive again in flowing water, and some specimens of large trout remaining for an hour in water containing ten parts in a million of sulfuric acid showed no symptoms of poisoning.

From a publication of the United States Geological Survey, "On the Effects of Some Industrial Wastes on Fishes," by M. C. Marsh, of the Bureau of Fisheries, I find the statement: "The reaction of water which will support fish life must be slightly alkaline. When the water becomes even slightly acid fish cannot live in it, and in experimenting with acid pollutions the alkalinity of the water used as a diluent of course affects the results." These experiments were tried with Potomac water, which showed, by titration with decinormal sulfuric acid (methyl orange indicator), an alkalinity of from forty-six to fifty-two parts per million of calcium carbonate equivalent.

From the above examinations and quotations, my opinion is that the sludge from the refinery produces a decided change in composition of the water of Birch creek, making it sufficiently acid so that fish would probably not survive in the water. This also probably affects the main stream at Caney, but not in sufficient quantity to make the water have an acid reaction, so that it is not demonstrated that the quantity is large enough, under present conditions, to kill the fish in the Caney river opposite the water-works at Caney. The sulfuric acid does, however, increase the "permanent hardness" of the water at Caney.

As there is no doubt that a comparatively large quantity of sulfuric acid is actually carried into Lake creek, and thence into Birch creek, from the refinery waste, and as dilution with water does not sufficiently change the composition so as to allow the water to be still alkaline, or neutral, in reaction, it is probable that the only practical method for neutralizing the waste water would be to run it into a tank of sufficient capacity so that it could remain for some time in contact with cracked limestone, with the object of forming a neutral calcium sulfate. The quantity of this latter substance, when allowed to escape into the stream by emptying the tank, would probably not be sufficient to cause serious inconvenience.

Respectfully submitted, E. H. S. BAILEY.

Prof. Wm. C. Hoad, the Board's sanitary and civil engineer, has been kept busy of late investigating the numerous applications to the Board for the installation of new or extensions of old public water-supplies and sewerage systems.

BULLETIN

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No. 5.

MAY, 1908.

VOL. IV.

Get the habit of doing things.

Hope to build on,
Work without end,
Faith in yourself, and the sum of these is enthusiasm!

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CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

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|--------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Meade | 2 | 2 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Miami | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 |
| Mitchell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montgomery | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| *Morris | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Morton | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 |
| Nemaha | 2 | 2 | 1 | 1 | 2 | 0 | 2 | 0 | 2 | 0 | 1 | 0 |
| Necaho | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Ness | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Norton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 9 | 0 |
| Osage | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Osborne | | | | | | | | | | | | |
| *Ottawa | | | | | | | | | | | | |
| *Pawnee | | | | | | | | | | | | |
| Phillips | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| Pratt | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rawlins | | | | | | | | | | | | |
| Reno | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 12 | 0 | 12 | 0 |
| Republic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| *Rice | | | | | | | | | | | | |
| *Riley | | | | | | | | | | | | |
| Rooks | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| *Rush | | | | | | | | | | | | |
| Russell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| Saline | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 11 | 0 | 1 | 1 |
| *Scott | | | | | | | | | | | | |
| Sedgwick | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 3 | 0 |
| *Seward | | | | | | | | | | | | |
| Shawnee | 0 | 0 | 0 | 0 | 4 | 1 | 7 | 0 | 30 | 0 | 0 | 0 |
| Sheridan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 0 |
| Smith | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| Stafford | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stanton | | | | | | | | | | | | |
| Stevens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 |
| Sumner | 2 | 2 | 0 | 0 | 3 | 0 | 4 | 0 | 3 | 0 | 2 | 0 |
| Thomas | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 |
| *Wabunsee | | | | | | | | | | | | |
| *Wallace | | | | | | | | | | | | |
| Washington | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Wichita | | | | | | | | | | | | |
| Wilson | | | | | | | | | | | | |
| †Woodson | | | | | | | | | | | | |
| *Wyandotte | | | | | | | | | | | | |
| Cities: | | | | | | | | | | | | |
| Atchison | 1 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 16 | 0 | 0 | 0 |
| *Coffeyville | | | | | | | | | | | | |
| Kansas City | 14 | 13 | 6 | 0 | 6 | 0 | 24 | 0 | 59 | 0 | 10 | 0 |
| Leavenworth | 0 | 0 | 2 | 1 | 4 | 0 | 3 | 2 | 6 | 0 | 92 | 0 |
| Parsons | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 14 | 0 | 200 | 0 |
| Pittsburg | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Topeka | 4 | 4 | 1 | 1 | 3 | 0 | 13 | 0 | 46 | 0 | 1 | 0 |
| Wichita | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 28 | 0 | 52 | 1 |
| State Institutions | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

We desire to put ourselves on record as approving the "16 to 1" proposition, *i. e.*, "An ounce of prevention is worth 16 ounces (one pound) of cure."

FOOD ANALYSES No. XV.

By J. T. WILLARD, M. S., Food Analyst for the Board.

MANHATTAN, KAN., May 11, 1908.

The following reports are submitted upon materials recently examined. Much of the work has consisted in only partial examinations directed toward some particular point, in the belief that in that way the limited amount of work possible would be made the most serviceable.

The following tables show the results obtained with samples of milk, cream and ice-cream. Preservatives were not detected in any of them:

MILK AND CREAM.

| Insp. No. | Serial No. | DEALER. | Place. | Fat. | Class. |
|-----------|------------|-----------------------------|------------------------|-------|----------|
| 6073 | 2072 | A. Waldner..... | Kansas City | 3.85 | Passed. |
| 6074 | 2073 | A. Morrison..... | Shawnee Mission..... | 3.40 | .. |
| 6075 | 2074 | Geo. Trager..... | Merriam | 2.95 | Illegal. |
| 6076 | 2075 | A. J. Puhr..... | Shawnee Mission..... | 3.80 | Passed. |
| 6077 | 2076 | V. W. Puhr..... | Rosedale | 3.75 | .. |
| 6078 | 2077 | F. Larson..... | .. .. | 3.55 | .. |
| 6079 | 2078 | R. Nelson..... | Graystone Heights..... | 4.10 | .. |
| 6080 | 2079 | J. H. Trager..... | South Park | 3.25 | .. |
| 6083 | 2080 | Fisher Bros..... | Merriam | 3.80 | .. |
| 6084 | 2081 | Fisher Bros..... | .. .. | 3.65 | .. |
| 6085 | 2082 | Fisher Bros..... | .. .. | 3.75 | .. |
| 6086 | 2083 | J. Nelson..... | .. .. | 4.85 | .. |
| 6087 | 2084 | J. P. Jensen..... | Rosedale | 3.80 | .. |
| 6088 | 2085 | S. Johnson..... | .. .. | 3.65 | .. |
| 6089 | 2086 | Nels Johnson..... | .. .. | 4.10 | .. |
| 6090 | 2087 | Hans Anderson..... | .. .. | 3.85 | .. |
| 6091 | 2088 | Hans Anderson..... | .. .. | 4.20 | .. |
| 6092 | 2089 | D. Barron..... | Merriam | 4.35 | .. |
| 6093 | 2090 | D. Barron..... | .. .. | 3.85 | .. |
| 6094 | 2091 | L. L. Ely..... | Rosedale | 4.00 | .. |
| 6095 | 2092 | A. H. Shumate..... | Argentine | 1.95 | Illegal. |
| 6096 | 2093 | J. T. Evans..... | .. .. | 2.25 | .. |
| 6097 | 2094 | J. H. Borgstede..... | .. .. | 2.60 | .. |
| 6098 | 2095 | Johnson Bros..... | .. .. | 3.85 | Passed. |
| 6099 | 2096 | Walker Bros..... | Rosedale | 3.85 | .. |
| 6100 | 2097 | L. Vanmoe..... | Armourdale..... | 3.25 | .. |
| 6101 | 2098 | S. Segelbum..... | Kansas City | 4.10 | .. |
| 6102 | 2099 | F. Seiber..... | .. .. | 3.80 | .. |
| 6103 | 2100 | L. Belstrup..... | .. .. | 2.40 | Illegal. |
| 6104 | 2101 | J. H. Queenenbery..... | .. .. | 2.55 | .. |
| 6105 | 2102 | M. C. Baldwin..... | .. .. | 3.25 | Passed. |
| 7133 | 2062 | J. T. Hogdon..... | Fort Scott | 3.95 | .. |
| 7134 | 2063 | W. R. Moore..... | .. .. | 3.70 | .. |
| 7135 | 2064 | A. M. Milburn..... | .. .. | 4.45 | .. |
| 7136 | 2065 | J. B. Palmer..... | .. .. | 3.05 | Illegal. |
| 7137 | 2066 | J. T. Hogdon..... | .. .. | 4.05 | .. |
| 7138 | 2067 | L. A. Burge..... | .. .. | 4.70 | .. |
| 7139 | 2068 | C. M. Sanders..... | .. .. | 3.05 | .. |
| 7140 | 2069 | C. M. Sanders (cream)..... | .. .. | 18.00 | Passed. |
| 7142 | 2070 | (Night's milk)..... | .. .. | 3.80 | .. |
| 7153 | 2122 | Columbus Dairy..... | Columbus | 3.50 | .. |
| 7154 | 2123 | East Side Restaurant..... | .. .. | 2.85 | Illegal. |
| 7158 | 2132 | J. L. Philip..... | Galena | 4.00 | Passed. |
| 7159 | 2133 | John Connelly..... | .. .. | 3.50 | .. |
| 7160 | 2134 | J. R. Guthrie..... | .. .. | 3.55 | .. |
| 7161 | 2135 | J. W. Connelly..... | .. .. | 3.50 | .. |
| 7162 | 2136 | J. W. Connelly (cream)..... | .. .. | 18.50 | .. |

ICE-CREAM.

| Insp. No. | Serial No. | MANUFACTURER. | Seller. | Fat. | Class. |
|-----------|------------|-----------------------------------------|--------------------------------------------|-------|----------|
| 5258 | 2157 | Chas. O. Woods Ice-cream Co., Iola..... | Bon Ton Bakery, Iola..... | 18.70 | Passed. |
| 5259 | 2158 | Ottawa Condensing Co., Ottawa..... | "Our Way" Taylor's Restaurant, Ottawa..... | 14.30 | Passed. |
| 5260 | 2159 | Watkins Creamery Co., Iola..... | S. R. Burrell Drug Store, Iola.. | 14.10 | Illegal. |
| 5261 | 2160 | Crabb's Drug Store, Iola..... | Crabb's Drug Store..... | 7.55 | Passed. |
| 7191 | 2187 | B. F. Phillips, Fort Scott..... | B. F. Phillips..... | 14.40 | |
| 7192 | 2188 | F. Bachman, Fort Scott..... | F. Bachman..... | 15.10 | |

In the samples of milk listed above which showed a deficiency of fat, determinations of total solids were made, with the following results:

No. 6075. Total solids, 12.32 per cent. ; solids not fat, 9.37.

No. 6095. Total solids, 7.69 per cent. ; solids not fat, 5.74.

No. 6096. Total solids, 10.11 per cent. ; solids not fat, 7.86.

No. 6097. Total solids, 10.77 per cent. ; solids not fat, 8.17.

No. 6103. Total solids, 11.02 per cent. ; solids not fat, 8.62.

No. 6104. Total solids, 9.82 per cent. ; solids not fat, 7.27.

No. 7136. Total solids, 11.43 per cent. ; solids not fat, 8.38.

No. 7139. Total solids, 10.87 per cent. ; solids not fat, 7.82.

The standards for this state define milk to be "The fresh, clean lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than eight and one-half (8.5) per cent. of solids not fat, and not less than three and one-quarter (3.25) per cent. of milk fat." The minimum total solids would be the sum of the minimum for fat and for solids not fat, namely, 11.75 per cent.

In interpreting the results of milk analyses it must be borne in mind that these so-called standards represent the poorest quality that is to be permitted to be sold as genuine milk, and they are so fixed as to provide for the extremes shown by individual cows at times. The mixed milk of a herd should never show results as low as this minimum. The average composition of many thousand samples of market milk has been found to be about 3.8 per cent. of fat and 12.75 per cent. of total solids, making 8.95 per cent. of solids not fat. Milk falling much below these figures is inferior, even though it does not fall to the minimum standard permitted by the law, and if it be milk from a herd it cannot but be looked upon with suspicion. Tampering with the milk supply of any particular herd cannot certainly be detected without a knowledge

of the normal average composition of the milk supplied by that herd.

If milk has been adulterated by the addition of water, the percentages of all its constituents will be reduced proportionately; that is, if the adulterated mixture is three-fourths milk and one-fourth water, the fat will be three-fourths as high as it should be, and the solids not fat three-fourths of that which would have been shown otherwise. If milk is adulterated by skimming, the percentage of fat will be reduced, while the percentage of solids not fat will be somewhat increased. This is due to the fact that the solids not fat, consisting chiefly of milk-sugar and casein, but including small amounts of other substances, are not removed in as large proportion as the fat by the skimming. On account of the removal of the fat, the skim-milk will weigh less than the whole milk, but as it contains nearly all of the solids not fat the percentage of these will be greater in the skim-milk, as it is calculated upon a smaller total weight. It is, therefore, possible for an unscrupulous dealer to skim off part of the fat, thus increasing the specific gravity and the total solids of the skimmed milk, and then to add a small amount of water to bring these to near normal.

It is the practice of many milk companies to bring their supply to a uniform percentage of fat. They can do this without altering the percentage of solids not fat materially by mixing the whole milk with skim-milk. It is obvious that the temptation would always be to bring the milk to a minimum consistent with the law, and the natural tendency of unrestrained competition if this practice is permitted must be to reduce the quality of the milk supply to the lowest standard. The definition of milk as quoted in a preceding paragraph does not permit such mixing of skim-milk and whole milk. Such a product comes within the definition of blended milk, which is as follows: "Blended milk is milk modified in its composition so as to have a definite and stated percentage of one or more of its constituents." It appears indisputable, then, that milk brought to a definite composition, or which consists of any mixture of skim-milk and whole milk, should be sold as blended milk. In this way the purchaser will be apprised of the probability that the milk is inferior in fat content. It may also be added that the definitions of "milk" and "blended milk" given above for this state are the same as those promulgated by the Secretary of Agriculture, and which are used in the administration of the federal food and drugs law. The practice of selling "blended milk" as "milk" is therefore a violation of both federal and state laws.

No. 1136; serial No. 2105. Cream. Sold by August Nyman, Savonburg, Kan. This sample was very thick and curdy, looking like cottage cheese. When warmed and stirred it formed a fine emulsion, which was quite white in appearance. It contained neither formaldehyde nor borates, and duplicate tests gave 45 per cent. of fat. A portion of the sample was heated for some time and much of the fat separated out. This seemed to possess a lower melting-point than another sample of butter-fat of known origin. It remained in a more fluid state. No reaction was obtained for cottonseed-oil. The Reichert-Meissl number was found to be 26.1. The iodine number was 32.6. The refractive index at 31.2 degrees was 1.4568. The refractive index of a pure butter-fat at the same temperature was found to be 1.4571, the Reichert-Meissl number of this butter-fat being 27.8. All of the constants of the fat obtained from the abnormal-appearing sample were found to be within those exhibited by butter-fat. As the constants of genuine butter-fat vary somewhat widely, it is quite possible for butter-fat to be adulterated with a small percentage of certain other fats and, the fraud escape detection. The sample in question gave one of the reactions for gelatin. Passed in respect to fat.

No. 7150; serial No. 2124. Country Butter. Manufactured by Sam Wyble, Columbus, Kan., and sold by Campbell & Brodney, Columbus, Kan. This butter was of poor quality, having much the appearance of cottage cheese—granular and curdy. It was white and had a cheesy smell. It represents nearly the lowest grade of country butter, of which there is unfortunately more than the one sample submitted. It contained 29.26 per cent. of water, 66.86 per cent. of fat. Illegal.

Attention may be drawn to the fact that under the dairy law it is perhaps possible for a farmer producing a small surplus of butter to legally sell an article of as low quality as this. It is, however, illegal for dealers to sell it as butter. In such sales they are not only violating the state law but are liable to severe penalties under the internal revenue laws of the United States, which laws also apply to farmers as well. The Treasury Department holds that butter containing sixteen per cent. or more of water is adulterated butter and subject to the special tax required on that article.

No. 7151; serial No. 2125. Dairy Butter. Manufactured by E. B. Davis, Columbus, Kan., and sold by Campbell & Brodney, Columbus, Kan. Rose of Richmond brand. This was an excellent sample of butter. It contained 10.03 per cent. of water.

CANNED SALMON.

A considerable number of brands of canned salmon have been examined. Results were obtained indicating the presence of sulfites, but all of the manufacturers maintain that no preservatives of any kind are used. Winton has called attention to the fact that meat samples, especially those that have undergone incipient decomposition, distilled as required in the test for sulfites, give off sulfur compounds which are oxidizable to sulfuric acid. This leads to uncertainty in the testing of such meat. Winton passes the evolved gases through dilute copper sulfate solution to absorb hydrogen sulfid. This modification of the test was applied in our examination of the canned salmon. It was found that sulfur compounds would pass one absorption flask, and only when the gas passed through two absorption flasks were they completely or nearly completely free from sulfur compounds oxidizable by bromin. Experiments were instituted to ascertain to what extent sulfites could still be detected after passing the mixed gases through two absorption flasks. A solution of acid sodium sulfite of known strength was added to the salmon and a good test for sulfites was obtained in the distillate when 23.2 milligrams of sulfur dioxide per 100 grams of salmon were present. Good tests were obtained with 11.6 milligrams and 4.6 milligrams, and a distinct test was obtained with 2.3 milligrams of sulfur dioxide per 100 grams. With smaller amounts the results were unsatisfactory.

It appears, therefore, that canned salmon very readily yields sulfur compounds, and that these may be removed by passing the gas evolved by distillation through absorption flasks containing a solution of copper sulfate, and that under these circumstances 2.3 milligrams or more of sulfur dioxide per 100 grams of the salmon may be detected. The following brands of salmon were examined in this way, and they all would be said to contain sulfites if tested by the unmodified method, unless very distinct precipitates of barium sulfate were disregarded; but tested by the modified method, all are passed in respect to sulfites. Nos. 5179 and 5191 to 5196 were also tested for borates, benzoates, and salicylates, and these were found absent.

No. 5179. Lunch brand Salmon, Manufactured by Chas. Bew & Co., Astoria, Ore. Sold by Allingham & Beattie, Manhattan, Kan.

No. 5191; serial No. 2116. Two samples Orchid brand Salmon. Manufactured by Fidalgo Island Canning Company, Anacortes, Wash. Sold by O. Wm. Holt, Manhattan, Kan.

No. 5192; serial No. 2117. Two samples Volunteer brand Salmon. Manufactured by Kilchis Packing Company, Kilchis Point. Sold by O. Wm. Holt, Manhattan, Kan.

No. 5193; serial No. 2118. Two samples Queen brand Salmon. Manufactured by Elmore & Co., Astoria, Wash. Sold by O. Wm. Holt, Manhattan, Kan.

No. 5194; serial No. 2119. Two samples Initial brand Salmon. Manufactured by Alaska Packers' Association, San Francisco, Cal. Sold by O. Wm. Holt, Manhattan, Kan.

No. 5195; serial No. 2120. Two samples Sailor brand Salmon. Manufactured by Alaska Packers' Association, San Francisco, Cal. Sold by O. Wm. Holt, Manhattan, Kan.

No. 5196; serial No. 2121. Two samples Winner brand Salmon. Manufactured by the Point Roberts Packing Company, Point Roberts. Sold by O. Wm. Holt, Manhattan, Kan.

No. 12148; serial No. 2046. Silverside brand Salmon. Manufactured by the Queen Charlotte Fish Company. Sold by O. Wm. Holt, Manhattan, Kan.

No. 12149; serial No. 2047. Chieftain brand Salmon. Manufactured by the Alaska Packers' Association, San Francisco, Cal. Sold by O. Wm. Holt, Manhattan, Kan.

No. 12150; serial No. 2048. Unio brand Salmon. Manufactured by the Unio Packing Company, Astoria, Ore. Sold by O. Wm. Holt, Manhattan, Kan.

No. 12151; serial No. 2049. Shasta brand Salmon. Manufactured by Reid, Murdock & Co., Chicago, Ill. Sold by E. B. Purcell Trading Company, Manhattan, Kan.

No. 12152; serial No. 2050. Anther brand Salmon. Manufactured by Kelly, Clarke & Co., Seattle, Wash. Sold by the E. B. Purcell Trading Company, Manhattan Kan.

No. 12153; serial No. 2051. St. Bernard brand Salmon. Manufactured by the Pacific Bay and Navigation Company, Seattle, Wash. Sold by the E. B. Purcell Trading Company, Manhattan, Kan.

No. 12154; serial No. 2111. Manufactured by Reid, Murdock & Co., Chicago, Ill. Sold by the E. B. Purcell Trading Company, Manhattan, Kan.

MISCELLANEOUS MEAT PRODUCTS.

No. 5216; serial No. 2110. Rex Lunch Sausage. Cudahy Packing Company, Omaha, Neb. Sold by Spot Cash Grocery, Manhattan, Kan. The physical appearance was good. A good reaction for borates was obtained, and the tomato sauce with the sausage

gave a good reaction for salicylates. The sample was very likely old stock. Illegal.

No. 7101; serial No. 2103. Vienna Sausage. Wilson Packing Company, New York and Chicago. Sold by W. H. Berry, Pittsburg, Kan. Sample contained neither borates, benzoates or salicylates. Passed as to preservatives.

If the ruling of the federal authorities as given in food inspection decision No. 84, amending regulation 19 in respect to correct name, be adopted, the use of the name "Vienna" in connection with this sausage should probably not be regarded as misbranding, though the letter of the decision requires that the state or territory where the article is manufactured shall be stated on the principal label. Perhaps naming New York and Chicago might fairly be taken as indicating the state, though the place of manufacture of the particular sample is certainly not designated.

No. 5201; serial No. 2104. Deviled Ham. Van Camp Packing Company, Indianapolis, Ind. Sold by O. Wm. Holt, Manhattan, Kan. Sulfites, borates, benzoates and salicylates were not detected. Passed as to preservatives.

No. 5212; serial No. 2106. Shredded Codfish. J. W. Beardsley & Son, New York. Sold by Spot Cash Grocery, Manhattan, Kan. The label states: "The contents of this package are preserved from decay by the use of natural sea salt of the finest quality. This special grade of sea salt contains a minute per centage of boric acid, which renders it peculiarly valuable as a preventive of decomposition." Sulfites, benzoates and salicylates were absent, but borates were detected. The claim that sea salt containing boric acid is of the finest quality is not tenable. As boric acid has been found to be injurious its use is illegal, no matter by what subterfuge it is introduced, if it is so used as to penetrate the food article so that it cannot be removed mechanically. Illegal.]

No. 5182; serial No. 2107. Condensed Mince Meat. Emery Food Company, Chicago. Sold by O. Wm. Holt, Manhattan, Kan. The sample gave a test for sulfites after passing the gas through copper sulphate. Illegal.

No. 5183; serial No. 2108. Condensed Mince Meat. Libby, McNeill & Libby, Chicago, Ill. Sold by O. Wm. Holt, Manhattan, Kan. Gave a good reaction for sulfites when tested in the usual way, but with the copper sulfate wash bottle no reaction was obtained. Passed.

No. 5215; serial No. 2009. Cove Oysters, Lee brand. H. D. Lee Mercantile Company, Salina, Kan. Sold by Spot Cash Gro-

cery, Manhattan, Kan. Borates, benzoates, salicylates and sulfites were not detected. Passed.

FLOUR.

The flours reported upon were sent in to be tested for moisture only. The food standards require that flour shall contain not more than 13.5 per cent of water. One or two of these, it will be noted, exceed this amount slightly.

| Insp. No. | Serial No. | BRAND. | Manufacturer. | Per cent. water. |
|-----------|------------|-----------------------|--------------------------------------------------|------------------|
| 1217 | 2166 | Gold Belle | Olathe Mill and Elevator Co., Olathe, Kan..... | 11.79 |
| 1218 | 2167 | Diamond Jubilee | Olathe Mill and Elevator Co., Olathe, Kan..... | 11.63 |
| 5253 | 2161 | ..... | Manhattan Milling Co., Manhattan, Kan..... | 10.87 |
| 5254 | 2162 | ..... | Long-Barner Milling Co., Manhattan, Kan..... | 10.82 |
| 5255 | 2163 | ..... | Wall-Rogalsky Milling Co., McPherson, Kan..... | 11.25 |
| 5256 | 2164 | ..... | Colburn Bros., McPherson, Kan..... | 12.01 |
| 5257 | 2165 | ..... | New Pearl Milling Co., McPherson, Kan..... | 12.08 |
| 6106 | 2173 | Fancy Patent | Malone & Wenzel, Herndon, Kan..... | 13.19 |
| 6109 | 2225 | Butler's Best..... | A. J. Butler, Kansas City, Kan..... | 11.75 |
| 6110 | 2226 | ..... | Ismert & Hencke Mfg. Co., Kansas City, Kan..... | 12.50 |
| 7172 | 2170 | ..... | Rea-Patterson Milling Co., Coffeyville, Kan..... | 13.60 |
| 7173 | 2171 | Gold | Rea-Patterson Milling Co., Coffeyville, Kan..... | 12.77 |
| 7181 | 2220 | Gilt Edge | N. Sauer Milling Co., Cherryvale, Kan..... | 12.10 |
| 7187 | 2221 | Eagle | Eagle Roller Milling Co., Independence, Kan..... | 12.77 |
| 7188 | 2222 | Gold Leaf | Bowen Milling Co., Independence, Kan..... | 13.08 |
| 7189 | 2223 | ..... | Fort Scott Roller Mills, Fort Scott, Kan..... | 13.58 |
| 7190 | 2224 | Standard | Fort Scott Roller Mills, Fort Scott, Kan..... | 13.58 |
| 7194 | 2172 | Best | Kiddoo Milling Co., Coffeyville, Kan..... | 11.65 |

MISCELLANEOUS CEREAL PRODUCTS.

No. 5190; serial No. 2109. Old Mammy's Lye Hominy. Scottsburg Canning Company, Scottsburg, Ind. Sold by O. Wm. Holt, Manhattan, Kan. The first samples, tested in the usual way for sulfites, showed them to be present. Manufacturers deny using sulfites or other bleaching material, but state that at one time they permitted another manufacturer to use some of their labels. A sample sent by them direct from the factory gave no reaction for sulfites. A second sample purchased from Mr. Holt gave the reaction the same as the first one. Borates, salicylates and benzoates were absent. Illegal because of sulfites.

No. 5198; serial No. 2129. Riverside Cream Corn. Lange Packing Company, Eau Claire, Wis. Sold by O. Wm. Holt, Manhattan, Kan. Saccharin, benzoates and salicylates absent. Sulfites were detected by the usual mode of treatment, and another can gave a good reaction for them when the copper sulfate modification of the method was used. The sample has the appearance of containing added thickening material. Illegal.

No. 7127; serial No. 2141. Riverside Cream Corn. Lange Packing Company, Eau Claire, Wis. Jobber, Parker-Wilson Grocery Company, St. Joseph, Mo. Seller, C. H. Burnett, Girard, Kan. This sample gave a slight test for sulfites, the gas being

passed through copper sulfate. The reaction was much weaker than with No. 5198. *Illegal.*

The manufacturers of this corn admit using sulfites formerly, but deny using any bleach now. Their new labels read "Riverside Sugar Corn" but no sample of that could be obtained.

No. 5199; serial No. 2131. Argonaut Sweet Kernel Cream Corn. Fort Stanwix Canning Company, Rome, N. Y. Sold by O. Wm. Holt, Manhattan, Kan. Saccharin, benzoates and salicylates absent. Sulfites detected using the copper sulfate modification of the method. A second sample from the same source also gave a good test for sulfites by the same procedure. This corn is possibly old pack. On its new labels the company has substituted "sugar" for "cream," but is still working off its old labels. *Illegal.*

No. 5200; serial No. 2137. Kaw Valley Sugar Corn. Lawrence Canning Company, Lawrence, Kan. Sold by O. Wm. Holt, Manhattan, Kan. Saccharin, benzoates and salicylates absent. Careful and repeated tests for sulfites upon this and another sample of the same brand showed them to be absent. *Passed.*

No. 5213; serial No. 2138. Golden Tassel Sugar Corn. Grand Island Canning Company, Grand Island, Neb. Sold by Spot Cash Grocery, Manhattan, Kan. Salicylates, benzoates and saccharin absent. The result in testing for sulfites was very weak and the manufacturer is given the benefit of the doubt. *Passed.*

No. 5214; serial No. 2139. Twin brand Sugar Corn. Gordonville Canning Company, Gordonville, Iowa. Sold by Spot Cash Grocery, Manhattan, Kan. Saccharin, benzoates, and salicylates absent. Sulfites present, as shown by the copper sulfate modification of the test. *Illegal.*

No. 7123; serial No. 2130. Valley brand Sugar Corn. Valley Canning Company, Eau Claire, Wis. Sold by Ed. C. Strickler, Girard, Kan. Saccharin, benzoates and salicylates absent. The reaction for sulfites was very faint when the copper sulfate modification was used. *Passed.*

No. 7124; serial No. 2140. Mikado Sugar Corn. Manufacturer not stated. Sold by Ed. C. Strickler, Girard, Kan. No preservatives or sulfites found. *Passed.*

MISCELLANEOUS.

No. 5208; serial No. 2144. Almond Extract. Eddy & Eddy, St. Louis, Mo. Sold by O. Wm. Holt, Manhattan, Kan. Nitrobenzene and hydrocyanic acid absent. *Passed.*

No. 5218; serial No. 2127. Artificial Strawberry Extract. Price Flavoring Extract Company, Chicago, Ill. Sold by Spot Cash

Grocery, Manhattan, Kan. Label states: "This cannot be made from the fruit. There are no true flavoring extracts of strawberry, raspberry or pineapple on the market. It is impossible to obtain flavoring extracts from these fruits." The sample is apparently colored with cochineal, and the presence of artificial coloring should be declared on the label. In respect to their claim that it is impossible to obtain flavoring extracts from the fruits named, it should be said that pharmacists prepare genuine flavoring extracts from the fruits. These naturally are very expensive, and it is probably true that they are not on the market. It is, however, untrue to say that they cannot be prepared. Illegal.

No. 5181; serial No. 2114. Dr. Price's Jelly Dessert. Price Flavoring Extract Company, Chicago. Sold by O. Wm. Holt, Manhattan, Kan. The label states that it is "composed of refined sugar, lemon acid, edible gelatine, Doctor Price's flavoring extracts and harmless food colors, free from aniline, coal-tar dyes or ether." "Strawberry flavor, harmless color." The article has a rather sour taste, with a suggestion of artificial strawberry flavor, and appears to be chiefly a gelatin preparation, with sugar. It gave no reaction for aniline colors, but did for cochineal. The expression "harmless color" would be unambiguous if it read "color added."

No. 5223; serial No. 2143. Salad Oil, Huile d' Salade. E. London, Nice. Sold by Spot Cash Grocery, Manhattan, Kan. Chemical tests for, and refractive index of, cottonseed-oil.

No. 5205; serial No. 2142. Libby's Imported Olive Oil. Libby, McNeill & Libby, Chicago. Sold by O. Wm. Holt, Manhattan, Kan. No evidence of adulteration was detected. Passed.

No. 5233; serial No. 2045. Sour Gherkins, Victorex brand. Parkhurst-Davis Company, Topeka, Kan. Sold by Frank Eakin, Square Deal Grocery, Manhattan, Kan. The pickles gave a good test for alum, but were free from benzoates and salicylates. The presence of alum in pickles is permitted only until September 1, 1908.

No. 5211; serial No. 2044. Baked Beans with Tomato Sauce. J. S. Farrén & Co., Baltimore, Md. Sold by Spot Cash Grocery, Manhattan, Kan. Sulfites, borates, benzoates and salicylates absent. Passed as to preservatives.

No. 5220; serial No. 2112. Waverly brand Sweet Peas. Albert Landreth Company, Manitowoc, Wis. Sold by Spot Cash Grocery, Manhattan, Kan. Borates, benzoates, salicylates, sulfites, saccharin and copper absent. Passed.

The analyses recorded herein were made by assistant Mr. C. A. A. Utt, whose industry and faithfulness in this connection is gratefully acknowledged.

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Vinegar.

By RUDOLPH HIRSCH, Commercial Chemist, Kansas City, Mo.

Vinegar, as the name implies, is sour wine, or rather the resultant solution after the oxidation of alcohol, producing a dilute solution of acetic acid.

When the juices of fruits are expressed they carry a quantity of sugar in solution. These sugars ferment, producing a dilute solution of alcohol and carbonic acid gas, which is given off. Under the influence of a small organism, *Mycoderma aceti*, this alcohol is oxidized to acetic acid. Thus most of the vinegars were prepared in former times. These fruit vinegars carried with them, besides the acetic acid, a quantity of extractive matter, characteristic of the fruit from which it was prepared, and to which to a great extent the finished product owed its particular flavor. Thus the various wine and cider vinegars were prepared, and each carried with it a characteristic color derived from the fruit.

In so far as climatic conditions greatly govern the time required for acetification, it was not an unusual thing to find vinegars as low as one to one and one-half per cent. of acetic acid. Particularly was this the case with vinegars that had been stored in barrels and allowed to remain in cellars, where no attempt was made to allow for a free circulation of air and no attempt to control the temperature. As a result, these vinegars were not far removed from the hard-cider stage. Only a chemical analysis would show whether this product was truly only partially fermented or whether it had been completely fermented and diluted with water. Accordingly, such a vinegar would of necessity be considered an illegal product. It certainly would have to be termed substandard.

To overcome this unsatisfactory and tedious method of manufacture, the so-called generators were built, which simply consist of large casks equipped with an outlet spigot at the bottom; above this is a false bottom with numerous perforations, and onto this are piled beech shavings. The cask is then headed with a perforated top, and above this an intermittent flushing device is arranged which periodically discharges a certain amount of the alcoholic liquid which flows over the perforated head and drips onto the shavings. These shavings have previously been impregnated with the "mother of vinegar." Just above the false bottom of the cask are a number of small holes permitting the free ingress of air. These generators are usually arranged in tiers, so that the liquor can pass from one generator into the next, and so on until acetifi-

cation is complete. Thus is accomplished in a few hours what was formerly unsatisfactorily done in periods sometimes extending over years.

Besides the various fruit vinegars that have been on the market for years, we find the malt vinegar, which is a vinegar prepared from malted barley. This vinegar is very extensively used in England and is rapidly coming into favor in this country. It usually is of a higher acetic acid strength than the fruit vinegars, and is richer in extractive matter. The color is usually a rich dark brown, due, of course, to the caramel produced in the malting of the barley.

Distilled vinegar has been on the market for quite a long time, but due to the practice of artificially coloring it with caramel it has not been generally recognized, and has been sold promiscuously as a cider vinegar; when uncolored it was sold as white wine vinegar. Distilled vinegar is simply a dilute acetic acid solution, made by the fermentation of the alcoholic distillate from the fermented mash of grain. In the process of distillation of the mash, nothing but the alcohol and water are distilled off, and this distillate, when put through the generators, produces vinegar of usually about 10 per cent. acetic acid. The acid strength is then cut down by the addition of water to the legal standard.

This vinegar is extensively used, especially in pickling vegetables as well as curing meats. Although it does not contain the ethereal flavors of fruit vinegar, it is quite probable that it is of better keeping quality and freer from extraneous materials than any other kind of vinegar. The worst charge that can be brought against this particular product was that it masqueraded under the added caramel color as a fruit vinegar, which was a fraud pure and simple.

Within the past eighteen months the trend of all food legislation has been to cause all products to be sold for exactly what they are. Although coloring matter, when not harmful, is permitted, or rather tolerated at present, the signs of the future seem to indicate that all coloring which is added in imitation of another product will be considered a violation of the law. Such a procedure certainly is a violation of the spirit of the law, if nothing else. A number of states have already specifically barred the sale of artificially colored vinegar. As a result, distilled vinegar is being sold on its merits and is gaining every day in favor, although it is now as clear as water.

There are, besides the above-mentioned vinegars, various so-

called sugar vinegars on the market, made from solid glucose, molasses, sorghum and kindred substances. Without endeavoring to discuss the merits of the product, the one point about these vinegars that first arises in the minds of those persons engaged in the enforcement of food laws is the presence of coloring matter. These vinegars, without exception, are of a rich amber color.

Let us consider the glucose vinegar. This product at first was termed a grape-sugar vinegar. Theoretically, there might be some slight argument in favor of the name, but as a matter of fact these vinegars are made from solid glucose, obtained by hydrolization of starch. The name accordingly would certainly be misleading, for the purchaser would probably consider the product as being made from grapes, or, in other words, a wine vinegar. Now, for the color, glucose comes into the market in a number of forms, three of which will interest us in this discussion. First, the dense, sirupy glucose commonly known as corn sirup. This form is seldom, if ever, used in the manufacture of vinegar. Second, neutral sugar, a white solid sugar; and third, climax sugar, a solid sugar partially caramelized. The latter product is the one usually used in the manufacture of the glucose vinegar, and naturally the finished product carries an amber color derived from the climax sugar.

From the chemist's standpoint, this question settles itself in the mere fact that caramel color is present, for by laboratory methods it can be removed. It is not a part of the chemist's duty to determine how the coloring matter was placed there; its presence or absence is all the chemist has to decide. There has been much discussion on this mooted question, but the one fact of prime importance that must always be remembered is that pure glucose will dissolve without color, and the fermented product made from this solution of pure glucose will also be without color. If, therefore, the original material from which the product is made is sufficiently impure to impart color to the finished product, it would seem to be conclusive evidence that it is a violation of the spirit of the law. The same facts hold true in the case of cane-sugar vinegar, for pure cane-sugar also produces a colorless solution in water and its fermented product would be colorless.

In considering this question one point must be constantly borne in mind: the question of the wholesomeness of the coloring matter is not the issue. The point is simply this: Does the coloring matter make the product appear better than it really is, and does it cover inferiority? These are the two points at issue.

As for the first point, it is undoubtedly true that by being col-

ored it can be substituted for the higher priced cider vinegar by the unscrupulous vender, and when dispensed in bulk it undoubtedly is. For this reason it has been declared illegal in distilled vinegar.

As for the second question, a fermented solution, if free from artificial color, will be quite cloudy. This is not apparent where the product is colored.

Correction in April Bulletin.

Laboratory No. 866. Essence of Lemon, purchased from Paul Orlopp, Burlingame, manufactured by McPike Drug Company, was from a broken package. Therefore the manufacturers should not be held responsible for the legality of the product.

The Sulfur Process of Fruit Bleaching.

From the Monthly Bulletin of the Dairy and Food Division of the Pennsylvania Department of Agriculture.

The readers of the BULLETIN will be interested and instructed by the following communication dealing with a very urgent present-day problem:

WAYNESBORO, PA., March 6, 1908.

Mr. James Foust, Dairy and Food Commissioner, Harrisburg, Pa.:

DEAR SIR—I have your letter of March 2, and in reply will say that nothing could have pleased me more than to have found the time to have written you a more descriptive letter in relation to the use and abuse of the sulfur process in bleaching fresh fruits preparatory to evaporation. But you are at perfect liberty to quote me as saying that the use of sulfur and all other bleaches, as salt-water, benzoate of soda, etc., should be vigorously discouraged, especially the present methods of using sulfur, and the length of time that the first prepared fruit is subjected to the fumes of the burning sulfur, which is termed sulfurous acid gas, which in turn is a corrosive poison. To make a test, put one pound each of sulfur, bleached dried apples, salt-water and evaporated apples, unbleached, as per sample I sent you; or, in other words, use three one-gallon stone jars or any other convenient receptacle, and put into each jar one pound of each kind of fruit, to which add two quarts of water, allowing the jars with the fruit and water to stand for forty-eight hours in a room where the temperature is below that which causes fermentation; then by tasting the juice or cider of each, and by saccharimeter weigh the juices and determine the specific gravity and the amount of sugar in each, or by chemical analysis you will find surprising results.

In the first place, in all of the commercial apple-evaporating plants (as the evaporators used for this purpose are wholly unadapted for evaporating any other fruits except the apple), the apples are pared, cored and trimmed. From the trimmers the apples pass into the bleacher, which is provided with a series of five or six boxes, each holding from two to three bushels of fruit;

and as these boxes filled with fruit follow each other, in consecutive order, through a horizontal flue or bleaching-box with a pot of burning sulfur underneath, from which the fumes—sulfurous acid gas—pass upward and into the bleacher, thus saturating the pared and cored apples so thoroughly that all bruised places in the ripe fruit and the very hard green fruit all come out of the bleacher white and so thoroughly poisoned that flies, gnats and other insects, including the honey-bee, will not go near the fruit that is intended to enter into the stomachs of the unsuspecting consumers; while on the other hand, just outside the evaporator building, you will find myriads of bees, flies, gnats and other insects helping themselves to the cores and skins (parings) that have just been removed from the apples in the pile of bleached fruit inside of the building, waiting its turn to go into the so-called evaporator. Even should the bleached fruit lie for several days no fly or insect will touch it, simply because it is poison, whether apples are evaporated as "whole stock" or cut into ring slices from the whole fruit after being bleached, from which little, if any, of the sulfur fumes can be dissipated in the process of evaporation by the present process of cold-bleaching and kiln-drying.

Being familiar with all kinds of farm, orchard, dairy, evaporating, canning, and packing-house food products, I feel justified in saying that in none of these have the actual food values been so completely changed by adulteration and artificial coloring matter as the commercial evaporated food products, more especially the apple, which by the indiscriminate use of sulfur has in many instances been rendered wholly unfit for food. Having personally superintended the construction of quite a number of commercial evaporating plants in different parts of the country within the past twenty-five years, I might say with equal propriety that I made and sold the highest priced evaporated apples this country ever produced, the net price f. o. b. New York being nearly \$400 per ton; and I believe I have seen in operation nearly all kinds and styles of dryers and evaporators, from the old hop kilns of forty years ago down to Doctor Ryder's color-retaining "American Evaporator." The difficulty with all upright kilns, or so-called evaporators, is that without the use of sulfur they are not calculated to do good work; even the small, upright, cook-stove dryers, in which the trays are stacked, *i. e.*, one above the other, the under side of the trays being exposed to the heat, moisture being forced to penetrate the fruit on the upper trays, causing the fruit to discolor badly and lose in weight in consequence of the steaming process.

More than twenty-five years ago, Doctor Ryder, whose former nursery business near Chambersburg, Pa., had been prostrated by the civil war, resulting in his planting extensive apple, pear and peach orchards immediately after the war, and when these orchards came into bearing, Doctor Ryder exhausted all there was to the kiln-drier and the upright-stack system. With his present appliances, though crude at first, he soon demonstrated the fact that the proper way to evaporate fruit was by exposing all cut surfaces of the fresh prepared fruit to continuous currents of heated air in such a manner as to dry off the cut or exposed surfaces of the fresh fruit and thus form an artificial skin or cuticle, covering the fruit and preventing the escape of the volatile fruit flavor and developing the saccharin or fruit sugar as near as was possible to be accomplished in an evaporator.

Very respectfully, JACOB F. RYDER.

Chemical Preservatives Sold Under Trade or Proprietary Names.

[North Carolina Report, December, 1907.]

The extensive use of antiseptics or chemical preservatives in foods and beverages is an evil that has for the past few years demanded the attention of food officials.

The knowledge that we have of the effect of these preservatives on digestion and health tend to show that they are deleterious, and that their effect on the health of the consumer depends upon the quantity and frequency of the dose.

An investigation by the Bureau of Chemistry, United States Department of Agriculture, has shown conclusively that the use in foods of at least three of these chemical preservatives, viz., boric acid or borates, salicylic acid or salicylates, sulfurous acid or sulfites is deleterious and dangerous to health.*

The national meat-inspection law provides that no meat or meat-food product containing any chemical preservative can be shipped from one state into another, and the national food law is rapidly preventing the use of chemical preservatives in foods in interstate commerce.

As the use of chemical preservatives in food has fallen into disfavor and has become a violation of many of the food laws of the country, these preservatives are being offered to the trade under proprietary names, or names by which their constituents are not recognized, as "Preservaline," "Iceine," "Freezine," "Freez-Em," "Froz-Em," "Frostine," "Refrigerine," etc. By selling them under trade or proprietary names and claiming that they are harmless and contain nothing the use of which in food is a violation of the law, manufacturers are not only able to continue to sell these preservatives, but to sell them at a price several times greater than the market value of their chemical constituents.

Thirty-one of these proprietary preservatives have been examined, and, without an exception, were found to contain some one or more chemical preservatives the use of which in food is a violation of the law.

The names of those examined, the results of the examination, and the claims made for them by the manufacturers are given in the following table.

* Recent investigations by the Bureau of Chemistry have shown that benzoic acid and benzoate of soda should be added to the list.

RESULTS OF THE EXAMINATION OF PATENT OR PROPRIETARY CHEMICAL PRESERVATIVES, THE USE OF WHICH IN FOOD R BEVERAGE IS A VIOLATION OF THE FOOD LAW.

| No. | BRAND NAME FROM LABEL. | Manufacturer or wholesaler. | Claims made by manufacturers regarding their proprietary preservatives. | Composed principally of the following: |
|--------|-----------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1 | Blue Seal Preservative..... | Blue Seal Extract Co., Boston, Mass. | Blue Seal Preservative is the best preservative for all foods..... | Boric acid and salicylic acid. |
| 2 | Compressed Preserving Powder..... | William Zinsser & Co., New York | Compressed Preserving Powder for beer..... | Salicylic acid and saccharine. |
| 3 | Cream Albuminoid..... | Preservalline Mfg. Co., New York | Cream albuminoid keeps cream fresh and sweet from five to seven days..... | Proteids dissolved in water and borax. |
| 4 | Cream Preserver, Pearl Brand..... | | For milk and cream use Pearl Brand Cream Preserver..... | Boric acid and salt. |
| 5 | Elmken's Preserving Cakes..... | New York Malt Roasting Co., N. Y. | | Salicylic acid, salicylate of soda and sugar. |
| 6 | Forman's Wine Preservative..... | | Forman's Wine Preservative is the very best. When Frost-Em is used all pieces of meat can be used in sausage and Hamburg steak..... | About 35 per cent. solution of formaldehyde. |
| 7 | Frost-Em..... | The B. Heller Chemical Co., Chicago, Ill. | The only scientific milk and cream preservative..... | Sodium sulfite and salt. |
| 8 | Frozein..... | B. Heller Co., Chicago, Ill. | | Borax, boric acid and salt. |
| 9 | Frozein..... | | | Weak solution of formaldehyde. |
| 10 | Frost-Em..... | | | Sodium sulfite and salt. |
| 11 | Fungicide..... | Douglas Filter and Specialty Co., Albany, N. Y. | A perfect antiferment for cider and sweet wines, free from salicylic acid..... | Borax, boric acid and sulfite of soda. |
| 12 | Hyper-Sunphire..... | | Egg preservative..... | Sodium benzoate, sodium bicarbonate and starch. |
| 13 | Iodine..... | The Heller Chemical Co., Chicago, Ill. | A wonderful discovery for keeping milk and cream..... | Salt, in excess, salicylic acid, sulfite of soda, sulfate of lime. |
| 14 | K. M. S. Preserving Powder..... | Rudolph Schneider | | Weak solution of formaldehyde. |
| 15 | Liebig's Kconserver..... | Preservalline Mfg. Co., New York | The best preserver for all kinds of meats. Takes the place of smoking meat..... | Sulfite of soda, sulfate of soda and large amount of sugar. |
| 16 | Liquid Smoke..... | | | Boric acid, salicylic acid. |
| 17 | M. Preservalline..... | Preservalline Mfg. Co., New York | For milk and cream use M. Preservalline..... | Formaldehyde and product from destructive distillation of wood. |
| 18 | Special M. Preservalline..... | Preservalline Mfg. Co., New York | The greatest and only scientific preservative for milk and cream..... | Boric acid and sodium bicarbonate. |
| 18 1/2 | Patent Antacid Tablets..... | E. J. Baggs & Co., New York | Antacid Tablets for preserving beer and guaranteed to be perfectly harmless..... | Weak solution of formaldehyde. |
| 19 | Preservalline..... | Preservalline Mfg. Co., New York | The greatest American food preservative..... | Sodium salicylate, salicylic acid, carbonate of soda and salt. |
| 20 | Preservalline..... | Preservalline Mfg. Co., New York | The greatest preservative for keeping cider, grape juice, etc..... | Borax and boric acid. |
| 21 | Preservalline B..... | Preservalline Mfg. Co., New York | The best preservative for all kinds of food substances..... | Benzoate of soda. |
| 22 | Preservalline Compound No. 2..... | Preservalline Mfg. Co., New York | Non-poisonous, a new scientific discovery..... | Borax and boric acid. |
| 23 | B. B. Preservalline..... | Preservalline Mfg. Co., New York | Preservative especially for creamery use..... | Solution of formaldehyde. |
| 24 | Preservalline Butter Powder..... | Preservalline Mfg. Co., New York | Preservative Butter Powder, makes churning easy, removes unpleasant taste..... | Borax, boric acid and salt. |
| 25 | Preservite..... | Otto Hann & Bro., New York | Preservite is the best preservative for cider..... | Bicarbonate of soda and small amount of borax. |
| 26 | Refrigerine..... | | For sausage..... | Benzoate of soda. |
| 27 | Rax Magnus..... | | | Sodium sulfite and salt. |
| 28 | Rax Magnus..... | | Preservative for milk and cream..... | Sulfite of soda, carbonate of soda and salt. |
| 29 | Rax Magnus, Viandine..... | | Preservative for meats, poultry, fish and game..... | Borax and boric acid. |
| 30 | Rax Magnus, Ocean Wave..... | | For oysters, clams and all sea food..... | Borax, boric acid and salt. |

Cesspools.

Numerous inquiries have been received by this department concerning the cesspool method of disposal of house sewage. The questions involve the following propositions, viz.:

1. Does the uncemented cesspool menace the purity of the neighboring ground-water supply used for domestic purposes?

2. If so, how may a cesspool be constructed so as to be sanitarily safe?

3. Should abandoned wells be used as cesspools?

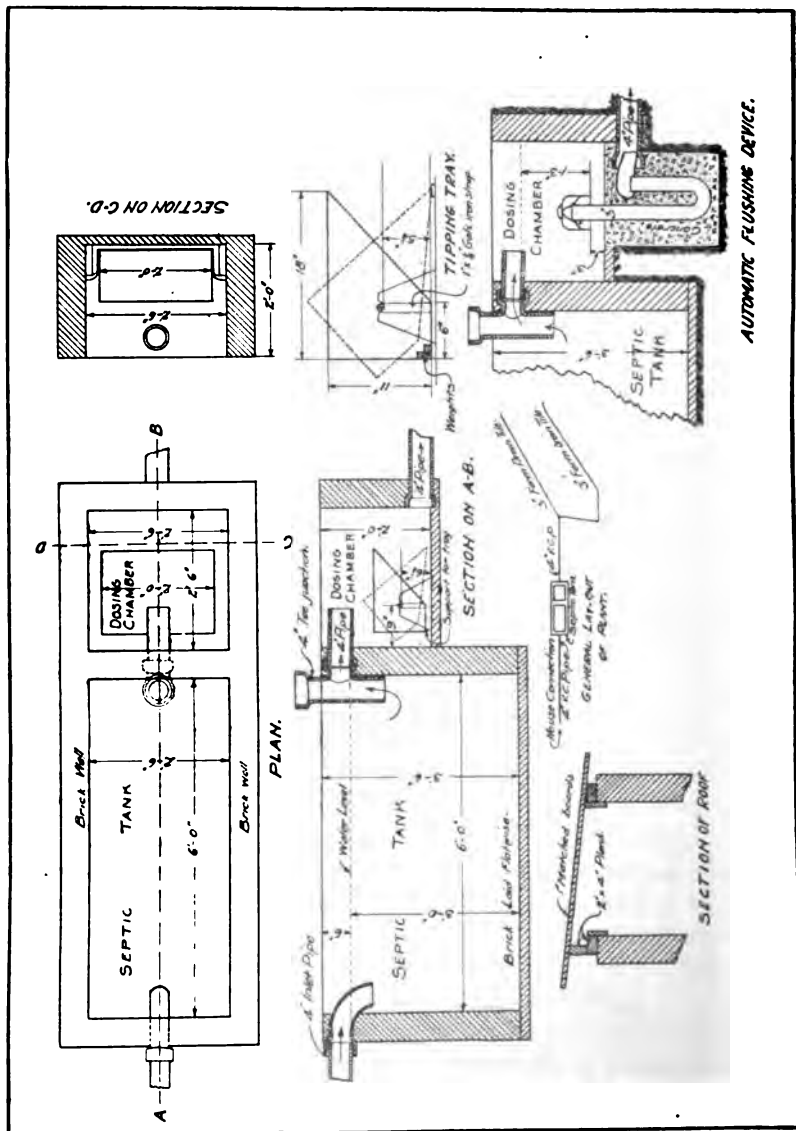
4. What are the dangers, if any, from the open-vault cesspool?

The first proposition must be answered in the negative. Naturally, the degree of pollution of a ground-water supply depends on the nature of the soil into which the sewage discharges. If the soil is a close sand or clay, the filtration of the liquid portions of the sewage would be slow and a greater degree of purification obtained than if the soil were a loose sand and gravel, permitting the cesspool to be rapidly emptied with comparatively little filtration directly into the water-bearing stratum. So, also, if there is an intervening stratum of clay or rock between the drainage of the cesspool and the water-bearing stratum, there might be an impervious barrier to the sewage reaching the water below such formation. It must be borne in mind, however, that the piercing of such presumably impervious stratum in boring or digging a well, and the constant possibility of a natural fault or fissure, subjects such barrier to a doubt, or at least indicates the possibility of the sewage finding its way to the underlying water. It seems, therefore, that the only safe cesspool in a community that uses the underground water as its source of supply is the cemented, water-tight one.

It has been proven that sewage from cesspools will in time percolate over 200 feet horizontally, and it must be self-evident that as time goes on the area of infection of the surrounding soil constantly increases; therefore it is asserted that, while a newly constructed cesspool will for a time adequately filter or purify the sewage in a comparatively short distance, the actual distance in which purification takes place is increased in direct proportion to the length of time it has been in use, assuming the sewage to be constant and similar in character.

The second question is a pertinent one, in that the cesspool seems to be a necessity in the towns and cities that are without a sewage system, for the modern house requires some system of sewage disposal. This may be accomplished by the construction of a water-

tight cesspool from four to six feet wide and eight to ten feet deep, with several drains of perforated tile near the top and running in different directions and placed immediately below the frost line. Such a cesspool would operate in the nature of a septic tank, much of the organic material being broken up by anerobic bacterial action, the liquid portion of the sewage draining away through the



perforated tile drains, making a fine system of subirrigation for grass, trees, etc., and at the same time protecting the water-bearing stratum from pollution.

Prof. William C. Hoad, the Board's sanitary and civil engineer, has kindly drawn plans for a sanitary residential sewage-disposal plant, which are herewith reproduced. It is confidently hoped that these plans may be generally adopted throughout the state, particularly in those towns located in the valleys where the ground-water supply lies close to the surface.

NOTES ON A RESIDENTIAL SEWAGE-DISPOSAL PLANT.

The disposal plant shown in the drawing is planned for an ordinary residence, and is designed to treat the liquid wastes from the kitchen sink, bath-room, laundry, and all other waste water coming from the house. The principle of purification employed is that of the septic tank followed by sub-surface irrigation. The sewage first enters the septic tank, where suspended matter is held until it is disintegrated by the intense bacterial activity in the tank. The clarified effluent then flows out into the dosing chamber where, by means of either the tipping tray or the automatic siphon (depending upon which device is used) it is flushed out into the distribution pipes of the sub-surface irrigation system. Here the sewage trickles out through the open joints of the pipes into the surrounding soil, where it becomes food material for the plant-life of the lawn or field.

The drawing shows a tank built of brick, though it could be constructed of either stone masonry or concrete just as well. The tank should be carefully plastered on the inside so as to be water-tight, and the inlet and outlet pipes should be set accurately to the elevations shown. The tipping tray in the dosing chamber can be made by any tinner, while the automatic flushing siphon, which may be used in place of the tipping tray if a somewhat better and more permanent form of construction is desired, can be secured from the manufacturers of automatic flushing appliances.¹ Whether the flushing siphon or the tipping tray is used for flushing the sewage out into the distribution pipes, the device should be tested after being set in position, to make sure that it is in good working order.

The connection from the house to the septic tank should be of four-inch vitrified clay pipe with bell and spigot joints, carefully laid to a uniform grade, and having the joints well filled with cement mortar. This careful cementing of the joints is particularly important in case the house connection is carried through a grove of trees. The pipes for the distribution system should be sound, hard-burned, three-inch agricultural drain-tile, in foot lengths. They should be laid from a foot to 18 inches below the surface of the ground, and should be laid on a grade of 3 inches to 100 feet. The pipes should be carefully laid so that the ends match. The matter of grade or "fall" should receive careful attention, since, if the grade be too great the lower end of the pipe will receive more than its fair proportion of sewage, while if the grade be too small the upper end will receive too much. The length of this three-inch pipe should be proportioned according to the nature

1. A three-inch siphon, arranged to discharge under a head of fifteen inches of sewage, can be purchased of the Pacific Flush Tank Company, of Chicago, for fifteen dollars.

of the soil. If the soil is open and sandy, approximately 200 feet is sufficient for the sewage from an ordinary residence, while if the soil is of a closer texture 300 or 400 feet will be necessary. The system is not well adapted to very tight and retentive clay soils, though it has been used successfully in soils of this character.

A plain board roof can be built over the tank, as shown in the drawing, a trap-door being left by which the interior of the tank may be inspected. Or, if a more permanent form of construction is desired and can be afforded, the walls of the tank may be made thicker, and the whole structure arched over and covered with earth. In this case, however, a large manhole should be left, through which the operation of the tank and dosing chamber may be inspected, and by means of which the tank may be cleaned out.

It should be the expectation that once in from one to four or five years the tank will require cleaning out, the frequency depending largely upon the character of the sewage. The sludge taken from the tank at these cleaning periods is relatively small in amount, and may be best disposed of by running it into a trench or furrow and covering it over with soil. This cleaning out should be done in the fall of the year, if possible, as at this season the sludge in the tank possesses less odor and is less objectionable to handle than at other times.

Particularly for those parts of the state where the rainfall is so small that the water of the sewage, as well as its fertilizing constituents, has an appreciable value, the disposal scheme outlined above may have a considerable economic as well as sanitary value. It is quite possible by this method to maintain in the driest region a large, well-fertilized and well-watered lawn. The process should be carried on entirely without odor, though, of course, the septic tank should be located at some little distance from the house—say a hundred feet or more, if possible. Particularly the disposal plant should not be near to any open well which is used as a source of water supply.

Third. The use of abandoned wells as cesspools is an extremely dangerous practice, as the sewage is discharged directly into the water-bearing stratum. Certainly there is no argument necessary to support the contention that, under no condition should an abandoned well be used as a cesspool or sewage discharged directly into water-bearing stratum.

Fourth. The dangers from the open-vault cesspool include all those of the deep cesspool, and in addition thereto it affords a breeding- and feeding-place for the house-fly, and the very great and real danger of flies carrying infection from such places to articles of food and drink. It is true that the distance to ground-water is greater and therefore a greater degree of filtration purification is obtained than in the deep cesspool, but, on the other hand, the opportunities of direct infection by the fly are so great and numerous as to very greatly outweigh the evils of the pollution of the water.

In many of the smaller towns of this state the cesspool is coming to be a very serious menace to the health of the community.

During the past year there is good reason to believe that in several instances the local epidemic of typhoid fever might be attributed to the pollution of the common ground-water supply by the discharge of the contents of cesspools directly into the water-bearing stratum. Individuals and communities are warned of the danger of this practice, and cities are urged to pass such ordinances as will at least regulate the cesspools in accordance with the above suggestions:

Smallpox.

The time seems to be rapidly approaching when quarantine for smallpox will be discontinued. At first thought, such a statement seems not only startling, but unsound and illogical, especially to the average layman. However, a review of the history of this disease, and of the recognized means of prevention—namely, vaccination—which has now been in universal practice for 110 years, leaves but one conclusion, and that is that every person may have absolute immunity from smallpox at but a trifling cost and with but little pain.

Every person owes it to himself and family to secure such immunity, and one's duty to society demands that such precaution as will insure the public health, so far as smallpox is concerned, should be taken. It follows, therefore, that those who refuse or neglect to provide an immunity for themselves which is *sure* and certain cannot with justice demand that an enormous annual public expense be continued in order that they be protected from infection; in other words, a great majority of the people be taxed to provide for the neglect of a small minority.

The state of Minnesota has already discontinued quarantine for smallpox, placing the burden of the disease on the shoulders of those only who neglect or refuse to be immunized. Other states are considering the advisability of taking the same action. It is urged that this action will be the means of bringing about a universal vaccination without the compulsion of law, leaving those to have the disease who prefer it to vaccination.

It is well to remember, also, that these very mild cases that have been so prevalent the past few years (which includes the great majority of cases), will give immunity from subsequent attacks but a relatively short time. There have been about fifteen cases which have come to the writer's personal notice that have had this mild type of smallpox or varioloid twice within two years. Other ob-

servers report similar cases. In none of these had there been a successful vaccination.



"NEVER BEEN VACCINATED."

The above photograph represents a typical case of the so-called "mild smallpox." People should be warned that those who have had these "mild cases" may not be proper nurses for smallpox, with the understanding that they will be immune from the disease. *A successful vaccination will give a much longer immunity than these mild cases. Get vaccinated!*

Do you use milk in any form? If so, get busy with your dairyman and insist on the tuberculin test for his dairy herd.

Tuberculosis a House Disease.

Many times has it been observed that after pulmonary tuberculosis has once been introduced into a house death follows death for years thereafter, the fatalities extending, it may be, to several families who successively occupy that house, and it appears to make but little difference whether there is or is not previous family histories of consumption in those families. The explanation of these successive tragedies is simply that due precautions against the transmission of infection from person to person has not been observed, or that infected rooms and things have been left without disinfection. The danger of infection from these sources is shown in the following histories.

In 1890 a farmer of good family history was seized with la grippe, and, owing to a relapse, was very slow in making a recovery. He spent much of his time during convalescence with a friend who was ill of tuberculosis. He himself became tubercular and finally died of the disease.

His son, a strong, hearty fellow, who waited upon him when he became too weak to care for himself, became tubercular, and died four years later.

A second son bought the carpet that had been in his father's room and put it in his own room. In about one year he began to decline. His trouble was also shown to be tubercular. He made a struggle for seven years and finally arrested the disease.

Another son bought the couch upon which his father had slept and used it to sleep on. He soon showed signs of decline, and examination showed him to be tubercular. After five years he succeeded in arresting his disease, and is still living.

A fourth son and three daughters, who were away from home attending college, remained well.

A young farmer rented the place and moved into the house. Within two years his wife died of tuberculosis, and two children of marasmus, which means, most probably, tuberculosis of the bowels.

Another young man with a healthy family moved into the house, and lost three children within eighteen months, of an obscure bowel trouble, which was undoubtedly tubercular, and the father died a few years later of "bronchitis," which was most likely tuberculosis.

It was now suspected that the house might have something to do with it, so a thorough cleaning was ordered. The paper was torn from the walls. The latter, with the woodwork, floors and ceilings, were washed down with an antiseptic solution. The house was

thoroughly disinfected. Thanks to this thorough disinfection, not one case of tuberculosis has developed in the house since.

These deaths occurred outside of our state, but Doctor Lagerson, in the few years in which he has been in practice in the town of New Sweden, has observed the following cases, among others which are not here given:

A young lady, eighteen years of age, a native of New Sweden, and of Swedish parentage with history of no tuberculosis in the family on either side as far back as can be remembered, contracted a cold while visiting a friend who was in the last stage of consumption, arrived home with a bad cough and with all the symptoms of incipient tuberculosis. The disease advanced rapidly in spite of all that could be done and the patient died after having been sick only five months. The sister of this young lady arrived home at the time of the death of this first case and afterwards wore a portion of the clothing of her deceased sister. She contracted tuberculosis and died within a few months thereafter.

A. B., a native of old Sweden, a farmer, who had been a resident of this country thirty years, contracted tuberculosis and lingered two years. The last year of his illness he was confined to his room. No precautions were taken with his sputum and no disinfection followed his death. The eldest daughter, strong and robust, twenty years old, who had never been sick before, contracted tuberculosis from the surroundings, and died a year after the death of her father. The mother of this girl, and the widow of A. B., died the past summer of the same disease, ten years after the death of her husband. Two sons remain, the younger of whom has suffered with tuberculosis the past two years.

S. J., twenty years of age, strong and robust; his father is living, but his mother died a few months ago from tuberculosis. He had lived the past year with his grandmother, whose daughter arrived home a year ago from Portland, Me., in the last stages of tuberculosis. He slept in an adjacent room and associated with her daily. After her death he occupied her room, contracted the same disease, and is now in a well-advanced stage of tuberculosis.

—*Bulletin Maine State Board of Health.*

The attention of county health officers is called to chapter 217 of the Session Laws of 1903, which prohibits spitting on the floors or walls of any public building. It is the duty of the health officer to see that the law is enforced.

International Congress on Tuberculosis.

On September 21, 1908, in the city of Washington, will begin the most important meeting of its kind ever held in the world, "The International Congress on Tuberculosis."

The following letter from the surgeon-general of the Public Health and Marine Hospital Service is self-explanatory, and indicates the desirability of every health officer attending this congress:

WASHINGTON, December 26, 1907.

SIR—The prevention of tuberculosis is engaging the increasing attention of public health authorities and philanthropists throughout the world. There is certainly no more important public health question demanding the activities of sanitary officers at the present time, and it is desirable that our people generally recognize its importance and enlist in the campaign against tuberculosis.

The diffusion of knowledge with respect to the disease is no doubt one of the most important measures that can be instituted by public health officials. With the view to this end, an international Congress on Tuberculosis will be held in Washington, D. C., September 21 to October 12, 1908. At this congress all phases of the problem will be considered, a number of eminent specialists from abroad having signified their intention to participate in the deliberations.

Section VI will be devoted to the national, state and municipal control of the disease, and it is urged that all public health officials attend its sessions, participate in the benefits to be derived from discussions of the governmental responsibilities and activities, and as a result be better prepared to assist in a systematic campaign against the disease throughout the country.

Respectfully, WALTER WYMAN, *Surgeon-general*.

It is hoped that as many health officers as can possibly go may attend. Kindly notify the secretary, if you can and will go, in order that your name may be sent to the secretary-general and the proper assignment made as a regular delegate from your county or city.

Baby-bye Up to Date.

(With apologies to the late Theodore Tilton.)

Baby-bye, here's a fly; let us swat him, you and I;
"For," says Pa, "bacteria he can carry far."

See him with his six thin legs

Filled with germ and microbe eggs!

In his knees lurks disease, which he gives with ease.

In his feet, all complete, each bacillus has a seat;

He can spread sickness dread with his lightest tread,

For he gathers germs galore,

Scatters them, and gathers more.

So he dies! Otherwise, he'd cause our demise!

—Camilla J. Knight, *New Idea Magazine*.

The Ophthalmo-tuberculin Test.

[New York State Journal of Medicine.]

Calmette and Wolf-Eisner suggested independently the conjunctiva as a favorable site for the tuberculin test. A marked hyperemia of the conjunctiva is produced in infected individuals as a result of placing a drop of tuberculin in the eye. This is entirely absent or very slight in non-infected individuals. This hyperemia depends upon the susceptibility of all the tissues to the tuberculin developed in infected individuals. Calmette employs a tuberculin free for irritant substances, such as glycerin, beef extractives, etc., prepared by precipitating old tuberculin with ninety-five per cent. alcohol and dissolving the precipitate in sterile water. A drop of one-per-cent. solution is placed in one eye of the patient. Within a few hours the tuberculous patients show very evident congestion of the palpebral conjunctiva. In some cases there is edema and purulent exudation. Changes are especially evident in the region of the caruncle. No pain is complained of, as a rule, but there is some slight discomfort and interference with vision on account of the abundance of the exudate. In Calmette's first series the reaction was positive in sixteen tuberculous individuals and negative in nine non-tuberculous. There was no constitutional reaction in any instance.

Baldwin has made a number of tests in this country. He employs purified tuberculin prepared by precipitation with ninety-five per cent. alcohol from Koch's old tuberculin. The precipitate is dissolved in normal salt solution. One-half and one-third per cent. solutions are used, as he considers a one-per-cent. solution too strong. The solution is kept in small glass tubes, sealed at both ends and sterilized. A measured drop (0.025 c.c.) is employed.

Absolutely no fever or constitutional reaction has followed the most marked eye reactions. The severest local discomfort is limited to photophobia, scratchy feeling, swelling and edema of the lids with more or less secretion of tears and exudation of pus, accompanying intense redness of the palpebral and ocular conjunctiva.

The majority of cases complain of no special discomfort. The irritation begins in from three to forty-eight hours and lasts two to three days. Perceptible redness of the caruncle and inner canthus may remain a week. The author suggests the following

SCHEME FOR RECORDING REACTIONS.

Negative. Slight difference in color when lower eyelids are pulled down and compared.

Doubtful. Slight difference, with redness of caruncle.

+ = distinct palpebral redness with secretion.

++ = ocular and palpebral redness and secretion well marked.

+++ = Deep injection of entire conjunctiva with edema of lids and photophobia.

Contra-indications. The author believes the test should not be used when there is disease of the conjunctiva, eyelids or cornea, such as acute or chronic conjunctivitis, hay fever, blepharitis, ulcers, trachoma, or where there is disease of the internal structures of the eye.

Undue exposure to dust, smoke or strong light during the test should be avoided.

The Preservation of the Teeth of School Children.

Rules recommended by the School Children's Committee of the British Dental Association and circulated for the information of managers and teachers of national schools in Ireland:

Without good teeth there cannot be good mastication.

Without thorough mastication there cannot be perfect digestion, and poor health results.

Hence the paramount importance of sound teeth.

Clean teeth do not decay.

The importance of a sound first set of teeth is as great to the child as a sound second set is to the adult.

Children should be taught to use the tooth-brush early.

Food left on the teeth ferments, and the acid formed produces decay.

Decay leads in time to pain and total destruction of the tooth.

The substance of the following rules should therefore be impressed constantly upon all children:

1. The teeth should be cleansed at least once daily.
2. The best time to clean the teeth is after the last meal.
3. A small tooth-brush, with stiff bristles, should be used, brushing up and down and across, and inside and outside, and in between the teeth.
4. A simple tooth powder, or a little soap, and some precipitated chalk taken up on the brush may be used if the teeth are dirty or stained.
5. It is a good practice to rinse the mouth out after every meal.
6. All rough usage of the teeth, such as cracking nuts, biting thread, etc., should be avoided, but the proper use of the teeth in chewing is good for them.

When decay occurs it should be attended to long before any pain results. It is stopping of a small cavity that is of greatest service.

In 10,000 children's mouths examined, 86 out of every 100 required skilled operative treatment.—*Journal of the British Dental Association.*

MEMORIAL DAY.

LEST WE FORGET.

WITH heads uncovered and with hearts attuned to grateful memories, we pause again beside the tomb where valor sleeps. With flowers and tears we voice the soul, and bow the head in contemplation of the sacrifice. And though the language of the lips be fruitless of a fitting eulogy, with words that falter and that fail the task we strive to speak a nation's homage to its martyred dead. Though crowding years have hurried on since these brave soldiers fell on fields of blood, remembrance knows no flight of years, and heroes' names and heroes' deeds are treasured in the nation's heart. And others, too, who fronted danger side by side with those who fell where bullets sang have heard the call in later years and sleep again beside their comrades in the silent camp. And others still, with whitening hair, are yet among us, and they gather yet, in thinning ranks, to march with tribute to the brother's grave. To all of these, the living and the dead, be highest honor and a fadeless name. Let children's children hear again the deathless story of their sacrifice; their sacred dust let no man desecrate. For in that distant day alone will patriot sons forget their deeds when Gratitude shall spurn the hand that brings a gift and pensive Memory shall forget her name.

HOMER HOCH, Marion, Kan.

BULLETIN

OF THE

Kansas State Board of Health.

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No. 6.

JUNE, 1908.

Vol. IV.

When in doubt—do right.

The rivers of Kansas have assisted in the spring house-cleaning.

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VITAL STATISTICS

Reported to the Kansas Board of Health for May, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|--------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| The State...total, | 80 | 52 | 51 | 9 | 48 | 5 | 154 | 4 | 446 | 2 | 844 | 0 |
| May, 1907 | 90 | 71 | 85 | 8 | 49 | 11 | 112 | 6 | 297 | 0 | 1416 | 19 |
| Allen | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 10 | 0 |
| Anderson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Atchison | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 11 | 0 | 0 | 0 |
| *Barber | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barton | 3 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 0 |
| Bourbon | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brown | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 24 | 0 |
| Butler | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 20 | 0 |
| Chase | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chautauqua | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 |
| Cherokee | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cheyenne | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Clark | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Clay | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 24 | 0 |
| Cloud | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Coffey | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Comanche | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Cowley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Crawford | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Decatur | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickinson | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Doniphan | 2 | 2 | 2 | 0 | 4 | 0 | 3 | 0 | 18 | 0 | 10 | 0 |
| Douglas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Edwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Elk | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Ellis | 0 | 0 | 0 | 0 | 3 | 1 | 38 | 1 | 0 | 0 | 1 | 0 |
| Ellsworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Finney | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Ford | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Franklin | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geary | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 |
| Gove | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Graham | | | | | | | | | | | | |
| †Grant | | | | | | | | | | | | |
| †Gray | | | | | | | | | | | | |
| Greeley | | | | | | | | | | | | |
| Greenwood | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 |
| †Hamilton | | | | | | | | | | | | |
| Harper | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Harvey | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Haskell | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Hodgeman | | | | | | | | | | | | |
| Jackson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Jefferson | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 10 | 0 | 1 | 0 |
| Jewell | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 300 | 0 |
| Johnson | | | | | | | | | | | | |
| Kearny | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 |
| Kingman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| †Kiowa | | | | | | | | | | | | |
| Labette | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 0 |
| †Lane | | | | | | | | | | | | |
| Leavenworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| Lincoln | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Linn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Logan | | | | | | | | | | | | |
| Lyon | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 2 | 4 | 0 | 0 | 0 |
| Marion | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 |
| Marshall | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| McPherson | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| Meade..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| *Miami..... | | | | | | | | | | | | |
| † Mitchell..... | | | | | | | | | | | | |
| Montgomery..... | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 8 | 0 | 14 | 0 |
| Morris..... | 1 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 14 | 0 | 0 | 0 |
| † Morton..... | | | | | | | | | | | | |
| Nemaha..... | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 28 | 0 | 30 | 0 |
| *Neosho..... | | | | | | | | | | | | |
| Ness..... | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 |
| Norton..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 0 |
| Osborne..... | 6 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 0 | 0 |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| † Phillips..... | | | | | | | | | | | | |
| Pottawatomie..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 |
| Pratt..... | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 9 | 0 | 0 | 0 |
| Rawlins..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 4 | 0 |
| Republic..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| * Rice..... | | | | | | | | | | | | |
| † Riley..... | | | | | | | | | | | | |
| Books..... | 0 | 0 | 2 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 6 | 0 | 10 | 0 |
| Russell..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 12 | 0 | 2 | 0 |
| Scott..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Sedgewick..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 0 |
| Seward..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 6 | 0 |
| Shawnee..... | 1 | 1 | 0 | 0 | 2 | 1 | 8 | 0 | 13 | 0 | 3 | 0 |
| Sheridan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 15 | 0 |
| Sherman..... | 0 | 0 | 0 | 0 | 1 | 0 | 13 | 0 | 0 | 0 | 0 | 0 |
| * Smith..... | | | | | | | | | | | | |
| Stafford..... | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Stanton..... | | | | | | | | | | | | |
| Stevens..... | | | | | | | | | | | | |
| Sumner..... | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 |
| * Wabaunsee..... | | | | | | | | | | | | |
| * Wallace..... | | | | | | | | | | | | |
| Washington..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| Wilson..... | | | | | | | | | | | | |
| † Woodson..... | | | | | | | | | | | | |
| Wyandotte..... | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 7 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 4 | 0 | 2 | 0 | 3 | 0 | 13 | 0 | 0 | 0 |
| Coffeyville..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| Kansas City..... | 27 | 17 | 20 | 0 | 1 | 0 | 5 | 0 | 23 | 0 | 15 | 0 |
| Leavenworth..... | 1 | 1 | 1 | 0 | 0 | 0 | 11 | 0 | 8 | 0 | 65 | 0 |
| Parsons..... | 2 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 31 | 0 | 60 | 0 |
| * Pittsburg..... | | | | | | | | | | | | |
| Topeka..... | 7 | 6 | 1 | 1 | 4 | 0 | 10 | 1 | 20 | 0 | 26 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11 | 0 | 57 | 0 |
| State Institutions. | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

Again we remark—Swat the fly.

Our national health is physically our greatest national asset.—
President Roosevelt.

FOOD ANALYSES No. XVI.

By E. H. S. BAILEY, Chemist for the Board of Health, and Prof. H. L. JACKSON, Food Analyst.

BEVERAGES.

No. 7028. Beer. Label, "Rochester Malt Ale Beer." Manufacturer, Rochester Brewery, Kansas City, Mo. Retailer, W. L. Bear, Rozel, Kan. Purchased by A. G. Pike, inspector. No benzoic or salicylic acid or sulfites were found. Alcohol by volume, 1.86 per cent.

No. 3324. Rochester Malt Ale. Sample received June 17, 1908, from O. C. Emery, chief of police, Wichita. On the label was "K. C. Brewing Company Fermented Beverage. Guaranteed under the Pure Food and Drug Law of Kansas to contain 1.95 per cent. of alcohol." Analysis shows this sample to contain 4.5 per cent. of absolute alcohol by volume. Illegal, misbranded.

No. 3325. Hopine. "Fermented Malt Liquor. Contains not to exceed 1.9 per cent. of alcohol." M. K. Goetz Brewing Company, St. Joseph, Mo. Received June 17, 1908, from O. C. Emery, chief of police, Wichita. This sample contains 4.5 per cent. of absolute alcohol by volume. Illegal, misbranded.

EXTRACTS.

No. 7193. Lemon Extract. Label, "One and one-quarter oz. net weight Standard Extract of Lemon, guaranteed, serial number 120." Manufacturer, Wells Bros. Commercial Company, Coffeyville. Retailer, Matthews & Son, Tyro. Purchased by A. G. Pike, inspector. The bottle held 1.11 oz., is therefore 11 per cent. short measure, and is misbranded.

No. 7182. Lemon Extract. Label, "Chapman's Artificially Colored Extract of Lemon, 2 ozs., full strength and measure." Manufacturers, Chapman & Smith, Chicago. Retailer, Heckman Mercantile Company, Liberty. Purchased by A. G. Pike, inspector. The bottle has no statement as to color. It is highly colored yellow with a dye, and is, therefore, misbranded.

No. 7177. Lemon Extract. "Pure Concentrated Extract of Lemon" on the carton. Bottle label, "Ka Noo Brand Extract of Lemon." Manufacturer, Ka Noo Chemical Company, Muskogee, Okla. Retailer, Geo. Bradshaw, Coffeyville, Kan. Purchased by A. G. Pike, inspector. It claims to contain not in excess of 60 per cent. of alcohol and 3 per cent. of lemon oil. It does not contain 60 per cent. of alcohol. Contains only a trace of lemon oil, and is, therefore, illegal.

No. 1170. Lemon Extract. Label, "Two Big Legitimate Drug Stores, Coffeyville, Kan." Deficient in oil of lemon. Illegal. Purchased by J. F. Tilford, inspector.

No. 1034. Lemon Extract. Label, "Dr. Fenner's Extract of Lemon, contains C. P. alcohol 52.5 per cent., oil of lemon, lemon peel and water; serial number 261." Manufacturer, M. M. Fenner Company, Fredonia, N. Y. Retailer, A. R. Reece, Bartlett. Purchased by J. F. Tilford, inspector. It contains only 44 per cent. of alcohol and merely a trace of lemon oil. It is, therefore, illegal.

No. 968. Lemon Extract. Label, "Extract of Lemon, W. M. Harris, 205 Summit street, Arkansas City, Kan." Purchased by J. F. Tilford, inspector. Contains slight trace of lemon oil. Illegal. The price of this one-ounce bottle is ten cents; therefore the purchaser is paying ten cents for one ounce of flavored water.

VINEGAR.

No. 5252. Vinegar. Passed.

No. 7155. Label, "Country Vinegar." Manufacturer not given. Retailer, F. A. Potter, Fort Scott, Kan. Purchased by A. G. Pike, inspector. This stock has changed hands and it is claimed that it is not known who the manufacturer is. This is distilled, colored vinegar. Color is not declared; therefore, illegal.

No. 7166. Label, "Country Vinegar." Retailer, Shulties & Shulties, Chetopa. Illegal.

No. 7168. Label, "Country Vinegar." Manufacturer, R. B. Williams, Bartlett. Retailer, P. A. Reece, Bartlett. Purchased by A. G. Pike, inspector. Illegal.

No. 7179. Vinegar. Passed.

No. 7171. Label, "White Wine Vinegar." Jobbers, Wells Bros., Coffeyville. Retailer, Chas. Fitch, Valida. Purchased by A. G. Pike, inspector. This sample is illegal, being low in acid. It is not a white wine vinegar, but a distilled vinegar, hence is misbranded.

No. 7176. Manufacturer, Kansas City Wholesale Grocery Company, Kansas City. Retailer, J. B. Thompson, Coffeyville. Brand, "Table Queen." Purchased by A. G. Pike as a sugar vinegar. This is illegal, being below the standard in acid for sugar vinegar or for any other vinegar.

No. 7183. "Country Cider Vinegar." Manufacturer, C. E. Peck, Cherryvale. Retailer, C. E. Peck. Purchased by A. G. Pike, inspector, as pure apple-cider vinegar. This is below the standard for apple-cider vinegar and is illegal.

SUGAR.

No. 3500. "Powdered Sugar, XXXX." This sample is one of several that were purchased in Lawrence. It contains a small quantity of starch, which was added, of course, to keep the sugar dry, so that it would not become lumpy. As it showed 99.96 per cent. of sucrose, the amount of starch is very small.

BAKING-POWDER.

No. 1283. "Pure Grape Baking Powder." Purchased by J. F. Tilford, inspector. "Drummer's Pride." On the can is a statement that the powder contains phosphate, soda, alum and starch. Manufactured by the Eldorado Baking Powder Company, Eldorado, Mo. On the can is also a picture of a bunch of grapes. This is a most common and deceptive method of misbranding. As cream of tartar is made from grape wine, the inference is that this is a cream-of-tartar powder, and the statement that it contains other ingredients does not overcome the impression that the false picture and name may produce. Illegal.

No. 7157. Baking Powder. Purchased by A. G. Pike, inspector, of Anderson & Canady, Galena, April 9, 1908. Jobber, S. C. Henderson, Joplin, Mo. "Red Cross" brand. "Pure, double strength. Price 10 cents. Composed of bicarbonate of soda, soda, alum and corn-starch." This is an ordinary baking-powder and affords, on being mixed with water, the ordinary amount of available carbon dioxid. The total carbon dioxid yielded by this baking-powder is only 17.25 per cent, and this is more than the *available* carbon dioxid. Comparing this with the ordinary standard baking-powders, it will be seen that it is theoretically impossible to prepare a powder of double strength. The statement "double strength" on the label is for the purpose of making the powder appear better than it really is. It is *not of double strength* and is consequently misbranded. Illegal.

No. 5059. "K. C. Baking Powder." Jaques Manufacturing Company, Chicago. Purchased by John Kleinhans, inspector, October 26, 1907. Passed.

No. 5060. "Calumet." Calumet Baking Powder Company, Chicago. Purchased by John Kleinhans, inspector, October 22, 1907. Statement No. 6 on the label is that "this is the strongest baking-powder on the market." This sample contains 10.80 per cent. of available carbon dioxid. This may have deteriorated since it was put up, but it is not the maximum of any samples found. Misbranded.

DRUG ANALYSES No. XII.

By L. E. SAYRE, Drug Analyst, State Board of Health.

LAWRENCE, KAN., June 15, 1908.

I herewith submit a report of the examination of drugs which have recently come to the drug laboratory of the University of Kansas. You will observe that some of these analyses relate to sweet spirits of niter. In regard to this particular preparation it should be stated that manufacturers and retailers have known for years that this is a very unstable preparation, and some manufacturing pharmacists have discontinued making and distributing it.

In order to determine what would be reasonable and just it will require some laboratory research work. We propose to investigate this question at as early a period as possible. For the present the following questions have been sent to manufacturers, asking for opinions:

"1. How long, in your opinion, should a sweet spirit of niter, made according to the official formula, keep under ordinary conditions of storage?

"2. How long will the preparation keep, under special care in storing?

"3. What, in your opinion, is the best method of keeping the preparation? Should the druggist be required to observe certain directions in keeping it?"

These questions have not been, up to the present time, fully answered, but we have sufficient data to say that it seems to be the consensus of opinion that the spirits of niter made by the United States Pharmacopœial method is not as stable as that made by some of the older processes. We have been able to show that sweet spirits of niter, made by some of the older processes, has kept with very slight deterioration for several years, but we are at present unable to state the best of these older processes, and are also unable to compare these with the present official process. We are, however, safe in saying that if sweet spirits of niter be made in small quantity and kept in small amber-colored bottles (one to two fluid ounces), tightly corked and in a cool and dark place, there is no excuse for its deterioration to any appreciable extent.

No. 1616. Spirits of Nitrous Ether. Inspector's No. 813. Great Bend, Kan. Contains 2.8 per cent. of ethyl nitrite.

No. 1617. Lime Water. Inspector's No. 816. Great Bend, Kan. Passed.

No. 1618. Spirits of Nitrous Ether. Inspector's No. 814. Great Bend, Kan. Contains 2.6 per cent. of ethyl nitrite.

No. 1619. Spirits of Camphor. Inspector's No. 812. Great Bend, Kan. Contains 6.6 per cent. of camphor and 6 per cent. of water. Illegal.

No. 1620. Tincture of Nux Vomica. Inspector's No. 811. Great Bend, Kan. The samples were too small for an assay method, but preliminary tests and the percentage of alcohol were favorable.

No. 1621. Lime Water. Frank Forter, Great Bend, Kan. Passed.

No. 1721. Dr. Warner's White Pine Tar Syrup. Doctor Warner, Coldwater, Mich. Misbranded, as it claims to cure all affections of lungs and throat. Contained syrup, oil of spearmint and other expectorant drugs.

No. 1724. Bowman's White Pine Cough Syrup. G. L. Bowman & Co., Elyria, Ohio. Misbranded. Claims to be a sure cure for all diseases of the lungs and throat. A saccharine solution, containing chloroform, syrup and expectorant drugs, with 4.28 per cent. of alcohol.

No. 1729. Hill's Peerless Cough Syrup. W. H. Hill & Co., Detroit, Mich. Misbranded. Claims to cure coughs, colds and hoarseness. A saccharine solution of expectorant drugs, aromatized with oil of spearmint.

No. 1736. Beauchamp's Balsam Pine. Beauchamp Manufacturing Company, St. Joseph, Mo. Misbranded. Claims to cure coughs, colds and pulmonary affections. Contained syrup, chloroform, wild cherry and other expectorant drugs.

No. 1737. Marsh's Ague Cure. Marsh Bros., Kansas City, Mo. Misbranded. Claims to be a permanent cure for all diseases arising from a malarial condition of the blood. Contains 17 per cent. total solids and 9.4 per cent. alcohol.

No. 1740. Dr. Sellar's Cough Syrup. R. E. Sellars, Pittsburg, Pa. Misbranded. Claims to cure coughs, colds and lung trouble. Contains syrup, acetic acid and other expectorant drugs.

No. 1741. Dr. Bosanko's Cough and Lung Syrup. The Bosanko Medicine Company, Piqua, Ohio. Misbranded. Claims to be a positive cure for all throat and lung affections. A saccharine solution of expectorant drugs with tar and chloroform.

No. 1747. Onion Syrup. Dr. Bosanko Medicine Company, Philadelphia, Pa. Misbranded. Claims to be a great cure for consumption, coughs and colds. Contains tar, syrup and chloroform.

No. 1807. Bay Rum. W. J. Lane, Garnett, Kan. The preparation contains 37.2 per cent. of alcohol and has the appearance of a good preparation.

No. 1853. Whisky. "Bottled in bond." Emporia, Kan. Supposed to be poisonous. No poisonous substance could be detected, and the preparation responded to the U. S. P. tests. Passed.

No. 1855. Paregoric. Inspector's No. 878. Dearing, Kan. The preparation contained only 50 per cent. of the required amount of alcohol. Illegal.

No. 1856. Olive Oil. Inspector's No. 879. Dearing, Kan. The sample was quite rancid; was not adulterated with cottonseed or other oils.

No. 1857. Spirits of Nitrous Ether. Inspector's No. 880. Dearing, Kan. Contained 0.048 per cent. of ethyl nitrite. Illegal.

No. 1858. Tincture of Arnica. Tennessee Drug Company, Coffeyville, Kan. Passed.

No. 1860. Balsam of Copaiba. Palace Drug Store, Coffeyville, Kan. Passed.

No. 1862. Oil of Sassafras (synthetic). Owl Pharmacy, Coffeyville, Kan. Passed.

No. 1863. Syrup of Wild Cherry. Inspector's No. 886. Coffeyville, Kan. The sample was in a state of fermentation, and only minute traces of the active properties of wild cherry could be detected. Illegal.

No. 1865. Elixir of Ammonium Valerate. Inspector's No. 888. Caney, Kan. The preparation was deficient in alcohol. Illegal.

No. 1866. Lime Water. Inspector's No. 889. Caney, Kan. The preparation was about three-fourths official strength. Illegal.

No. 1867. Oil of Wintergreen. J. W. Wilson, Caney, Kan. Passed.

No. 1868. Spirits of Nitrous Ether. Inspector's No. 891. Caney, Kan. Contained 0.025 per cent. of ethyl nitrite. Illegal.

No. 1869. Tincture of Arnica. R. W. Stevens, Hewins, Kan. Passed.

No. 1876. Spirits of Nitrous Ether. Inspector's No. 899. Chautauqua, Kan. Contained 2.31 per cent. of ethyl nitrite.

No. 1880. Yellow Oxide of Mercury. J. H. Fowler, Independence, Kan. Passed.

No. 1883. Yellow Oxide of Mercury. C. W. Fadler, Independence, Kan. Passed.

No. 1884. Spirits of Nitrous Ether. Inspector's No. 907. Independence, Kan. Contained 1.7 per cent. of ethyl nitrite. Illegal.

No. 1891. Yellow Oxide of Mercury. E. M. Kane, Coffeyville, Kan. Passed.

No. 1893. Paregoric. Inspector's No. 916. Coffeyville, Kan. The preparation does not compare favorably with a U. S. P. sample of paregoric, and contains only 20.3 per cent. of alcohol. Illegal.

No. 1894. Sweet Oil. Coffeyville Wholesale Mercantile Company, Coffeyville, Kan. The sample is rancid, and has a pronounced green color.

No. 1895. Laudanum. Coffeyville Wholesale Mercantile Company, Coffeyville, Kan. Passed.

No. 1896. Spirits of Nitrous Ether. Inspector's No. 919. Coffeyville, Kan. Contains 0.087 per cent. of ethyl nitrite. Illegal.

No. 1897. Essence of Peppermint. Inspector's No. 920. Coffeyville, Kan. Contains 12.2 per cent. of alcohol, and very deficient in oil. Illegal.

No. 1899. Balsam of Copaiba. E. A. Stevens, Sycamore, Kan. Passed.

No. 1905. Spirits of Nitrous Ether. Inspector's No. 928. Altoona, Kan. Contains 3.28 per cent. of ethyl nitrite.

No. 1907. Yellow Oxide of Mercury. Pierce Bros. & Eson, Neodesha, Kan. Passed.

No. 1916. Tincture of Sanguinaria. W. P. Ball, Longton, Kan. Passed.

No. 1917. Tincture of Arnica. W. P. Ball, Longton, Kan. Passed.

No. 1918. Spirits of Nitrous Ether. Inspector's No. 941. Longton, Kan. Contains 0.26 per cent. of ethyl nitrite. Illegal.

No. 1920. Yellow Oxide of Mercury. J. D. Petit, Elk Falls, Kan. Passed.

No. 1921. Fluid Extract Cottonwood Bark. Wm. Wright, Elk City, Kan. Deficient in alcohol. Passed.

No. 1923. Dilute Phosphoric Acid. Inspector's No. 946. Elk City, Kan. The sample was not a dilute acid, but one of the stronger acids. It was too dilute to conform with the tests for the stronger acid. Illegal.

No. 1924. Oil of Sassafras. Wm. Wright, Elk City, Kan. Passed.

No. 1925. Whisky. "Players Club." Morrin-Powers Mercantile Company, Kansas City, Mo. From Wm. Wright, Elk City, Kan. Contained 41.7 per cent. of alcohol. Per cent. is stated upon the label. Illegal.

No. 1927. Tincture of Nux Vomica. H. C. Schnoor & Co., Elk City, Kan. Passed.

No. 1929. Tincture of Arnica. Geo. T. Brown, Independence, Kan. Passed.

No. 1933. Petrolatum. Laboratory No. 956. Independence, Kan. This sample was of poor quality, in that it contained an appreciable quantity of coal-oil, showing that it had not been sufficiently purified.

No. 1934. Dilute Phosphoric Acid. Inspector's No. 957. Independence, Kan. This sample was one of the stronger acid, but was too dilute to conform with the strength of the official stronger acid. The preparation was labeled "Phospho Acid." Illegal.

No. 1936. Turpentine. Henry Boden, Independence, Kan. Passed.

No. 1937. Castor Oil. Henry Boden, Independence, Kan. Passed.

No. 1939. Dr. Drake's German Cough Remedy. Glessner Medicine Company, Findlay, Ohio. The opium and alcoholic strength are stated on label. It contains castor-oil, mucilage, syrup of ipecac, wild cherry, and paregoric.

No. 1959. Formaldehyde. Inspector's No. 1593. Pomona, Kan. The sample contained a black flocculent sediment, and was deficient in strength. Illegal.

No. 1969. Spirits of Nitrous Ether. Inspector's No. 7085. Alma, Kan. Contained 1.45 per cent. of ethyl nitrite. Illegal.

New Ruling on Vinegar.

At the annual meeting of the State Board of Health held June 22d and 23d, 1908, the following rule was unanimously adopted:

"By the standards promulgated by the secretary of the United States Department of Agriculture, and by the Kansas State Board of Health, the term 'vinegar' when used without qualification is held to mean cider vinegar, and the sale of any other kind under that name is misbranding.

"Vinegars artificially colored or made from materials specially chosen to impart a color similar to that of cider vinegar are held to be imitations of cider vinegar unless *each package, wholesale and retail, as delivered to the purchaser*, is distinctly marked by a label which states the true nature of the article."

This, in effect, means that retail dealers who sell vinegar which has added color, or vinegar made from material which produces a color in imitation of cider vinegar, are required to specifically label each retail package with the name of the kind of vinegar, and if color is added, the label should bear a statement to that effect.

Water Supplies and the Public Health.

By HORATIO N. PARKER, read before the fourth annual conference of State, County, and Municipal Health Officers.

No community can prosper without an abundance of water suitable for its peculiar needs. Some places demand it for irrigation; some for use in the arts and industries; some for fire protection, while still others utilize it for power—and every unit, from the individual to the greatest city, must have enough to drink and for the several other uses commonly called domestic. It would be profitable to discuss any one of these various forms of water consumption, for the citizen recognizes that the questions arising from them claim his thoughtful attention, if they are to be so solved, that his own town will keep at the forefront of progress. But this evening it seems proper to discuss water in the household, for from its use there arise problems of the public health which it is the duty of the physician, chemist and sanitary engineer to solve.

It is recognized that waters differ from each other in the therapeutic effects they produce, but it is not for this reason that they are of particular interest to the regular practitioner. He may or may not take advantage of this fact, but he must daily bear in mind that water is a vehicle which transports typhoid fever, and that any case of the disease that comes under his observation may have been contracted from drinking impure water. To investigate and decide this question is his privilege and duty.

It was in 1880 that the typhoid-fever bacillus was discovered. Prior to that time the spread of the disease was a matter of mystery, or at least of speculation. To-day it is known that the disease is spread only by the transmission of the specific organism from the sick to the well, which is accomplished in several ways.

The bacilla are discharged in saliva, urine and feces of the sick, and it is by the circulation of these that typhoid fever is disseminated; therefore, there should be no delay in sterilizing them. Consider the sick-room. From the saliva of the patient the clinical thermometer will become infected, and it is easy to see the harm that it may do in the hands of the uninstructed, anxious mother. By taking the temperature of others of her family they may become inoculated with the disease and be brought low by her very care. This instrument, as well as the eating utensils of the patient, should be sterilized. Particular care should be taken that the dishes are not allowed to stand around after use and that

they are boiled by themselves. They should not be washed with the family dishes.

Urine and feces should both be sterilized, the former by the addition of an equal amount of carbolic acid (1-20), and the latter by the addition of an equal amount of milk of lime. Linen soiled with discharges should be soaked in carbolic-acid solution, and bedpans and urinals should be scalded. The room where the patient is confined should be screened to keep flies from feeding on the excreta of the patient and from annoying him. Finally, those in attendance on the sick should wash their hands in a disinfecting solution after waiting on the patient. Where these precautions are taken, the spread of the disease is usually prevented. But it must be confessed that explicit obedience to such rules can be secured in only those cases which are attended by trained nurses, or in families of superior intelligence and honesty. The general practitioner has to deal with the ignorant, who simply cannot be made to understand such directions; with the stubborn, who will not do as they are told; and with the suspicious, who believe they are being imposed upon when told to buy and use disinfectants.

The result is that infectious matter finds its way out of doors and is disposed of in such a way that it spreads the contagion. It may be thrown in a manure heap which subsequently is used as a dressing for some garden in which are raised vegetables such as celery, lettuce, radishes, or others commonly eaten raw. These become infected, and later, when eaten, cause more typhoid fever. Sometimes stools are thrown into a privy where flies resort and feed, after which these pests fly away and track the excreta through the food and milk of some family which unsuspectingly eats its filthy meal and later comes down with typhoid fever. The urine and feces may be thrown out on the ground, where they may become partially dried and be blown about by the wind, in which case they may settle on the food and on the domestic or perhaps dairy utensils which are exposed in the vicinity. They may be washed away by a heavy rain, or may be carried down into the ground by a lighter one.

If the proper disposal of the excreta of the sick is difficult to secure, in those cases where the patient is confined to his bed it becomes absolutely within control. In those mild cases known as walking typhoid such patients keep about their work, either entirely through the sickness or until it has long been fastened upon them. Of course they spread the germs wherever they go; they may use not only one privy but many, all of which thus become

unknown foci for the spread of the disease. If it chanced that they are employed in purveying food they contaminate it and so propagate the disease. This is particularly true if they are connected with the dairy business, for milk is an excellent culture medium for typhoid-fever germs, which, once introduced into it, thrive and do a deal of harm. The distribution of milk from a farm where there is typhoid fever should be absolutely prohibited. The health codes of large cities are particular about this, but it is feared that those of small towns are much less so. Though milk epidemics are comparatively easy to trace because of their restricted character, the cases are apt to be severe unless the disease arises from a slight infection of the utensils rather than the milk itself.

The cases of walking typhoid are dangerous when they prevail among those engaged in picking small fruits, such as berries, apples, peaches, plums, pears, etc., for the excrement-stained fingers of the pickers are likely to contaminate the fruit. The danger from this source would be more pronounced were it not that the acids of the fruit are perhaps mildly antagonistic to the typhoid bacillus.

Domestics may be the means of circulating typhoid fever, particularly if they reside in their own houses, in which case they may be ill without their employers being aware of it, or they may bring the disease from their own homes, where they are perhaps helping to nurse the sick, to those where they are at work.

Up to this point the transmission of typhoid fever by (1) direct contact, (2) contaminated vegetables, (3) flies, (4) milk, (5) small fruits, and (6) indirect contact has been discussed. It seemed wise to do this, in order that it may be clearly in mind that however insidious the progress of typhoid fever through a community may be, it is always accomplished by the scattering abroad of infectious matter—usually the urine and feces—by agents susceptible of control by man, and also because it is desired to emphasize the fact that the prevalence of typhoid fever in a city is not always due to one of the commonest sources of the disease—polluted water supply.

Water is the greatest necessity of mankind, and one would think that in building a home man's first care would be to locate his well and arrange his dwellings, barn-yards and outhouses with reference to it. As a matter of fact this is rarely done. The house is constructed first and the well thereafter, usually with the aim simply to place it where it will be convenient; that is, in the center of domestic operations. The result is that almost invariably the kitchen sink, barn-yard and privy are close by, consequently the family

well, by which so much store is set, is commonly polluted. You have all, probably, had to tell some family that its well was unsafe, and have been met by a storm of protest to the effect that the well has been used for years—generations perhaps—without producing sickness; that its good qualities are widely known, and that it is resorted to by those who are anxious to get a particularly refreshing and wholesome drink.

Let us examine into this a little. A new well, unless it is sunk in a thickly populated district, is apt to be pure, for it is starting out life new, without any evil associations, but it soon begins to take them on. It responds to its environment. If it is an open dug well, material may be washed into it from the surface, and the rains are not particular what they carry into it. Manure, offal, slops and possibly feces are carried along with leaves, bits of wood and other material, so that in a relatively short time the water loses its innocence. Now open wells are relatively rare in Kansas. Driven and drilled wells are much more common. The pollution of these is probably slower, and comes about in this manner: Slops, feces and urine, instead of getting into the well directly from the surface of the ground, have to sink through it and down into the well. This is a somewhat long process, for, in the first place water moves slowly through the earth, and in the second the earth has a purifying effect, which is of two kinds. The first of these is mere straining. The fine particles are simply held back mechanically and do not reach the well. The texture of some sands is such that even bacteria are kept back, or at least their progress is so slow that they perish before reaching the water.

The other process is confined entirely to the upper ten or twelve feet of soil and for the most part takes place near the surface. It is the breaking down of organic matter by the saprophytic bacteria, and particularly its oxidation by the nitrifying organisms, which are bacteria that demand an abundance of oxygen for their life processes, and which have the power of oxidizing or completely mineralizing (if given time enough) organic matter. Now so long as the amount of organic matter to be cared for in this way is not too great, the work is thoroughly done, and these slops, etc., thrown on the ground by the slatternly housekeeper are robbed of their noxious qualities before they reach the well; but there is a tendency for organic matter to accumulate in the soil and the purifying capacity of the bacteria is overtaxed. Not only this, but organic matter absorbs moisture readily and consequently the air-spaces of the soil are filled with moisture, so that the air circulates through

the ground with difficulty and the nitrifying organisms become less efficient, until finally their purifying power is considerably reduced or even destroyed. Under such conditions wells become highly polluted.

What has been said of wells applies with equal force to cisterns located beneath the ground. True, they are constructed to retain water, not to collect it, but in time they become leaky and let in ground-water which may be contaminated. Doubtless you have often heard it said, "I thought rain-water was soft, but ours is hard." The reason is apparent. It is not rain-water, but a mixture of rain-water and ground-water that is being used. Right here cesspools may be considered. There is a well-rooted prejudice against them, but just why they are disliked may not be easy for all of us to state. This explanation is suggested: Recent bacteriological evidence indicates that the typhoid-fever organism survives but a short time in sewage, in which case one would not expect cesspools to hold them long. Yet it is known that towns whose drinking water is derived from wells and that have many cesspools are often severe sufferers from typhoid. How shall the anomaly be explained? There is probably little danger from a cesspool that retains its contents, whether it does so because it is of cement construction, or because it is located in an impermeable stratum of some sort. The danger is from that delight of householders—the cesspool that cares for itself by draining away.

It is to be remembered that cesspools are usually located below the zone of active nitrification or mineralization, so that there is little protection from that source. Hence, if typhoid-fever germs soon after being discharged into a cesspool escape into the relatively pure underground flow it may be that they travel a considerable distance, even to a near-by well, and arrive there in good condition. In this way the well is contaminated and those who use it are brought low. These facts are of general importance, but are of peculiar significance to the cities in the Arkansas river valley, where the ground-water has a considerable lateral movement.

It is always to be remembered that drinking merely polluted water will not produce typhoid fever. It is true that the morbidity statistics of towns which have installed filter plants show that other diseases besides typhoid tend to fall off with the introduction of pure water, which indicates that a water should be pure in order to be wholesome; but typhoid fever is never contracted from drinking water, unless it contains typhoid-fever germs. Thus it is that polluted waters are drunk for years with apparent impunity; they only

become vehicles for the spread of typhoid fever when the specific typhoid organism is introduced into them. A farmer may have at his home a well which receives drainage from his barn-yard, privy and house, and from which the informed would never think of drinking, but does not suffer any evil consequences at all from its constant use. Some member of his family who has been away returns sick with typhoid fever and brings the germs to the home, where they soon find access to the well, and which soon brings down with the disease other members of the family and neighbors who resort to it. Perhaps a passing pedler or other chance visitor, by using the family latrine, may bring in the germs, or they may come in with supplies purchased away from home, in which case the disease is developed by some member of the family, and thereafter the well becomes polluted by the excreta of the sick one. Water will never produce typhoid fever unless infected with typhoid germs.

Besides the contamination of wells, that of rivers and surface supplies should be considered. It is accomplished by the introduction (by design or accident) of sewage, feces or urine into them. The pollution may occur at several points and practically all of the time in large rivers, in which case their waters have to be filtered or otherwise treated before they are fit for human consumption. When this is not done and the water of the stream is used for drinking by several cities in the basin, it is not uncommon for typhoid fever to be passed successively down-stream by one city to another. This was clearly demonstrated by Whipple and Levy in their study of the typhoid fever on the Kennebec river, Maine. Reservoirs are usually contaminated by cases of typhoid fever appearing in the population which dwells on their catchment areas, though sometimes they are contaminated by deposits made by convalescents or those afflicted with walking cases who visit the watershed for recreation. Typhoid feces may get into the reservoir from having been thrown directly into some creek which is tributary to it and which flows past some patient's home. Most usually excreta are precipitated into the reservoir by a heavy rain or a rapid thaw gathering them up from the ground where they were thrown and then transporting them to the reservoir itself. Scranton and Butler, Pa., New Haven, Conn., Ithaca, N. Y., and many other places have all suffered from explosive outbreaks of typhoid fever which were caused by the sudden introduction of typhoid-infected feces into their water supplies.

The length of time bacilli will live in surface-waters cannot be definitely stated. It seems to vary with the vitality of the indi-

vidual germs. It is known that water is not a favorable medium for the support of typhoid-fever germs, and that they tend to die out in it. Therefore their detention in this element is in itself unfavorable to them. Other untoward influences are sunlight, the struggle for existence with other bacteria which survive in water better than they (particularly sewage types), their tendency to sink to the bottom, where they are likely to remain, and, perhaps least of all, the danger they run of falling prey to the microscopic organisms often found in water. All of these factors are more or less uncertain and operate with varying efficiency at different seasons of the year and in different streams. For instance, the turbid Kansas streams do not permit the sunlight to penetrate far beneath the surface, whereas in the clear rivers of New England the sunlight reaches to the very bottom. Much ingenuity and time has been spent in trying to definitely answer the question, How long will typhoid germs survive? The difficulty is to reproduce in the experiments the conditions which surround the germs in the streams. The most modern experiments seem to show that in slightly polluted surface-waters typhoid germs will live for from eight to ten days. It may be that they survive much longer, but it is certainly justifiable to assume the length of life as great as this.

Human and Bovine Tuberculosis.

Evidence of the transmissibility of the bovine bacillus of tuberculosis to the human is rapidly multiplying. What at first was a grave suspicion seems now a confirmed conviction, supported by repeated scientific verification of independent investigators. Schroeder, of the Bureau of Animal Industry, and Rosenau and Anderson, of the Public Health and Marine Hospital Service, assert that from experimental evidence there seems to be no doubt of such transmissibility. Dr. Theobald Smith, who has hitherto been an ultra conservative on this question, admits that there are at least fifty authentic cases where the bovine bacillus has been identified in various forms of tuberculosis of children.

The recent experiments of Detre, of Budapest, seem to be conclusive. They have been reported by A. Wolff-Eisner in *Wiener Klinische Wochenschrift*, January 30, XXI, No. 5, pp. 137-172, under the caption, "The Differentiating Cutaneous Tuberculin Reaction," the abstract of which appeared in the *Journal of American Medicine* of March 14, 1908, as follows:

Detre is chief of the tuberculosis department of the polyclinic at Buda-

pest, and reports extensive research on the cutaneous reaction to inoculation with the tuberculin or filtrates of cultures of human and bovine tubercle bacilli. In some cases the human tuberculin was inoculated in one arm and the bovine in the other, or the inoculations were made in a row on the same limb, first the tuberculin and then the human and bovine filtrates, and then inoculation with a carbolic acid solution. The results with two parallel rows always coincided in every respect. He gives illustrations of two arms thus treated, showing the invariable specific reaction to the human or bovine filtrate and the absence of reaction to one or the other, according as the infection was of human or bovine origin. He calls this the "differentiating reaction," and tabulates the classified findings in 110 cases. In 69 per cent. the reaction occurred only with the human inoculations and in 9 per cent. only with the bovine, while in 22 per cent. there was evidently mixed infection. The human reaction occurred less frequently in the surgical cases (59 per cent.) and most frequently with infected glands in the neck (82 per cent.) On the other hand, in the surgical cases the proportion of mixed infection was 33 per cent. and of a bovine alone 8 per cent., the total, 41 per cent., being a much larger proportion in these than in the lung and gland cases.

He calls attention to this preponderance of the bovine reaction in the surgical cases, thinking that it suggests infection by way of the blood from the alimentary tract. He found filtrates of bouillon cultures of the tubercle bacilli more effectual and reliable than tuberculin for the tests, and he also noted that the clinical character of the tuberculous affection imposed a special type on the reaction, acute, chronic, rudimentary or negative.

The above facts lead us to again remark that the elimination of the tubercular dairy cow is essentially necessary to the success of any plans that have for their object the prevention and restriction of the "Great White Plague."

The Tuberculin Test: Technique and Avoidance of Error.

By Dr. A. JOLY, Secretary Maine Veterinary Medical Association.

To diagnose bovine tuberculosis, a disease so varied in its attack upon the different organs of the body and in the extent of the disease process, must necessarily lead to mistakes when diagnosis is attempted by the ordinary means of examination. It has been confounded with the later stages of pleuropneumonia, with parasitic diseases of the brain, the lungs, the intestines, and with actinomycosis. A careful examination of the lungs by auscultation and percussion enables the expert to locate large tubercular masses, owing to dullness, loss of respiratory murmur and abnormal sounds, such as blowing, whistling and creaking. However, the majority of cases of tuberculosis in cattle, including many in which the lungs are quite seriously involved, cannot be detected in this manner.

The tuberculin test, which is marvelously accurate in its indica-

tions, has been universally adopted for the detection of tuberculosis.

Tuberculin is a diagnostic agent prepared by sterilizing, filtering and concentrating the liquids in which the tubercle bacillus has been allowed to vegetate. This substance, discovered by Koch, has the effect, when injected into the tissues of a tubercular animal, of causing a decided rise of temperature, while it has no such effect upon animals free from the disease. It is recognized as a most remarkable and accurate method of detecting tuberculosis, even in the early stages and when the disease has yet made but little progress.

The tuberculin test came into existence through the most careful and thorough scientific experimentation. From average temperatures calculated, it appears that in general the rise of temperature begins from six hours after the tuberculin is injected, reaches its greatest height from the sixteenth to the twentieth hours, and then gradually declines, reaching the normal again by the twenty-eighth hour.

The following method of making the tuberculin test seems to have been generally adopted :

The temperature of the animal is taken in the evening and immediately after the injection of tuberculin; a dose of 2 cc. of a ten-per-cent. solution is administered.

The injection is made hypodermically, behind the shoulder or on the side of the neck, after either region has been disinfected. The needle should be dipped into a disinfecting lotion after each injection.

Ten hours after the tuberculin has been injected the temperature is taken, and at intervals of two hours, until four readings have been obtained. In animals free from tuberculosis there is no reaction. In tuberculous cattle there is a decided rise of temperature, sometimes reaching 107.

Profiting by the experiments of many distinguished European veterinarians, also by the veterinarians of our Bureau of Animal Industry at Washington, errors in applying the tuberculin test can be easily avoided.

To begin with, the test should be made by a competent and honest veterinarian, a man with early medical training, a man who understands what antiseptics mean. In Maine, as well as in Massachusetts, the tuberculin test has been in the hands of almost everybody and anybody. No wonder that innumerable errors have been recorded.

In 1897 Doctor Voges compiled statistics of tuberculin tests, the accuracy of which had been determined by *post-mortem* examination, of 7327 reacting animals; only $2\frac{1}{2}$ per cent. failed to show tuberculous lesions. In the work of the Pennsylvania Live-stock Sanitary Board *post-mortem* examinations were made of 4400 reacting cattle, and the disease was found in all but eight. In this state (Maine), at the Augusta Insane Hospital, 148 animals reacted, and by *post-mortem* examinations all showed tuberculous lesions with the exception of two. It seems to me that these figures establish the reliability of the tuberculin test.

The normal temperature of cattle varies from 100 to 102, such variation being due to digestion, environment and other incidental causes. That considerable experience, technical skill and good judgment are required in arriving at right conclusions in doubtful cases is obvious.

In order to condemn an animal as failing to stand the test, two conditions must exist: First, a reaction of at least two degrees, and, second, the temperature must reach 104. The dose of 2 cc. of a ten-per-cent. solution of tuberculin must vary, according to the size of the animal and its age.

A physical examination of every animal before the test should be made with great care. Any animal with a temperature above 102 is not in a condition to be tested. If auscultation and percussion of the lungs reveal any abnormal conditions, the animal should receive a larger dose, and the least rise of temperature should put the operator upon his guard, for it is admitted that advanced cases of tuberculosis in many cases will cause a slight rise of temperature, and oftentimes fail to show reaction. The history of the herd, if possible, should be obtained.

In closing, I will add that no radical change in the feeding, watering or care of the cattle should be allowed during the time the test is being made.

The Usefulness of Carbon Dioxid.

By PERCY G. STILES, in the *American Journal of Public Hygiene*.

We have recently called attention to the unexpected value of muscular waste products as stimulants. Since Doctor Lee published his interesting results, further observations of a related kind have been reported by Doctor Henderson, of the Yale Medical School. Carbon dioxid is the chief oxidation product of animal metabolism. An average quantity of 800 grams is excreted daily.

through the lungs of a man. It has always been natural to regard this gas as something which the organism seeks to get rid of, and to assume that the more freely it is discharged, the better will be the condition of the tissues. But the remarkably large quantity in the arterial blood has always had to be reckoned with. The usual amount is not far from 40 cc. CO_2 in 100 cc. of blood. It has gradually come to be recognized that it is as bad to lower the percentage of carbon dioxid in the blood as it is to raise it. Mosso, the Italian physiologist, has noted this, and has given the name of "acapnia" to the condition of lowered carbon dioxid content. The word means, literally, "smokelessness." It can be produced in a certain degree by voluntarily deepening the respiration, but the tendency to desist from the attempt soon becomes overpowering. A state of apnoea (suspended breathing) tends to ensue, and so the normal relation between the gases in the blood is reestablished. Haldane has shown⁸ how very sensitive the respiratory center is to changes in the carbon dioxid content of the blood.

Doctor Henderson's studies have especial relation to the question of surgical shock. This is a threatening condition of collapse in which the weak, rapid heart and insufficient circulation are the obvious features. It has been natural to refer it to nervous causes. In the light of the latest observations it appears to have a simple chemical origin in acapnia. The characteristics of shock are readily produced by artificial respiration in dogs and can be counteracted by restricting the air supply. Thus the very measures which might be expected to give relief seem calculated to make matters worse. Acapnia may be produced during anæsthesia by the deep breathing which goes on while the general metabolism is at a low level, and if the tissues are freely exposed in an operation we have an additional channel by which carbon dioxid will escape. This last factor may be more important than would appear at first, for we must remember that while in the lungs we have the blood in the presence of alveolar air containing about five per cent. of CO_2 the blood in the surface vessels of an exposed organ is in contact with the atmospheric air with no such back pressure of the gas.

The author refers to the acute inferences of Mosso in regard to a possible connection between acapnia and "mountain sickness." Such a connection is made to appear more probable by Doctor Henderson's experiments. In rarefied air there is difficulty in getting the required amount of oxygen, and deepened breathing is necessary. There is no corresponding difficulty in discharging carbon dioxid, which passes off at least as freely as at the sea-level.

Under such conditions acapnia must be produced, and the pressing need for oxygen forbids the apnea which would naturally follow. Various disturbances may come from this abnormal composition of the blood, the quick, inefficient heart-beat being prominent here as in shock. It is said that surgical shock is more frequent at high altitudes, in Colorado, for instance, than elsewhere.

Physiologists have long since observed that carbon dioxide is stimulating to the intestinal wall, improving its tone and promoting peristalsis. Its reaction on the blood-vessels is probably similar. Its effect on the heart is less simple, for it seems to favor diastole and systole in turn, while in its relative absence (acapnia) the heart relaxes incompletely and is rendered ineffective more by this fault than by any failure to contract. It remains to be seen how far the effects are direct and how far they are brought about through the nerve-centers. Doctor Henderson has done well to open our eyes to the vital value of a compound which we regard as a typical waste product, and the additional papers which he promises will be anticipated with much curiosity.

A New Use for Hyposulfite of Soda in Securing Comfort and Health Against Chiggers.

By E. S. TUCKER, Field Assistant in charge of Green Bug Laboratory, Plano, Tex., under direction of the Texas Agricultural Experiment Station.

Chiggers are not insects, but are classed with the mites, being sometimes called harvest-mites. They occur on many kinds of plants, principally weeds and grasses, and may even crawl over bare ground in some places; also boards, timbers, stones and other objects lying within their reach. From such sources they readily become attached to the clothing of persons coming in contact with them, and thus find their way to the skin of the victim. After one of these foes penetrates into the skin an itching irritation is produced at and surrounding the point of entrance. If the stimulative action is allowed to run its course, the person so affected usually experiences the most discomfort on the second and third days following the attack, the violence being especially disturbing to the victim's sleep. Some persons suffer almost constantly from chiggers during the time of their prevalence, but most laborers who are subjected to continual exposure apparently become inured. Women and children are particularly susceptible to chigger attacks.

The distress occasioned by severe attacks is augmented by a feverish condition of the skin. The sufferer can hardly refrain

from scratching the affected spots, though knowing that the irritation will be aggravated in consequence. Cases are recorded showing that erysipelas and blood-poisoning have followed severe attacks from chiggers.

Most of the ordinary chigger remedies have been personally tried without obtaining more than temporary relief at the best, so that repeated applications were necessary to fully subdue an irritation. A chemical which, in my opinion, possesses superior merit above all previously known remedial agents, is hyposulfite of soda. This is the important fixing agent extensively used by amateur and professional photographers. It can be purchased at most drug stores, and is not expensive. Dissolve this salt in water, making a nearly saturated solution, and moisten or bathe the spots where chiggers have burrowed. The pests are evidently killed when the solution reaches them through their burrows in the skin, and then the irritation ceases permanently, though sometimes two or more applications may be required for obstinate or deep-set cases. No harmful nor disagreeable effect has attended the liberal use of a strong solution of this compound, except a slight smarting if the skin should be sore from scratching. The advantage which the use of this chemical affords over other known treatments against chiggers consists in the repellant property of the salt, besides its potency in suppressing the malignant action produced by these enemies when in the skin. It acts as a cure and preventative combined. In order to ward off chiggers, the solution should be applied as needed to as much of the body as becomes necessary to meet the extent of exposure. To get full benefit, allow the solution to dry on the skin without wiping. An application made early in the morning before starting out to work has proven sufficient to last a day and even longer. Having taken proper precautions in this manner, a person can traverse the worst-infested thickets with impunity.

So far as known to me, this chemical has not heretofore been announced as a useful agent in affording relief from chiggers, and, strange as the fact appears, several years have passed since its merit for such a purpose first came to my notice in rather a casual manner. The discovery happened while I was once engaged in photographic work, when, having occasion to allay an affliction of chiggers, a solution of hyposulfite of soda, which stood ready at hand, was used as a substitute for common soda or salt bath. So noticeable was the effect attending this application, first, by alleviating the distraction, then by preventing further infestation despite another ex-

posure in weeds, that I at once became impressed with the disclosure of a practical new use for the chemical to the benefit of mankind. Only by recent experience with it during the present season while engaged largely in field-work have I demonstrated its importance to warrant public recommendation.

A suggestion is made that similar trials with allied compounds, such as sulfite of soda and potassium sulfid, might determine equally as safe and efficient if not better agents for the suppression of chiggers. The latter compound, commonly known as liver of sulfur, is recommended for use in a spray solution against the red mite of cotton. The question arises whether a solution of this kind would not prove effective in ridding mites from other plants without danger to them, or to render lawns, poultry-yards and other areas free from chigger infestation at little expense.

Incidentally the fact might be mentioned that a strong solution of hyposulfite of soda is a valuable remedy for ivy poisoning. If the information given should be the means of inducing an extended use of hyposulfite of soda or any other suggested agent with marked success against another year's chigger infestation, my efforts to aid the people in securing comfort and health in the face of these foes will have served my object in making the properties known for such a purpose.

A Crusade Against Flies.

There has recently been undertaken in Glasgow and Liverpool a crusade against house-flies, which are now recognized as potent factors in the spread of typhoid fever and, perhaps, of other diseases. The suppression and destruction of flies necessitates a careful study of their life-history, not only in the summer months, but during the winter, that the larvæ may be destroyed and the annual crops of young flies prevented. Further, attention has been called to the fact that the wasp is the most effective destroyer of flies, and, on that account, in the fly crusades the people are urged not to molest wasp nests.

The attention of sanitarians to the spread of disease by insects doubtless arose from the discovery of the spread of malaria by mosquitoes, but at this time we know that not only flies and mosquitoes, but cockroaches and bedbugs have spread disease.

It has been shown that the house-fly can be the medium of transmission for anthrax, cholera, tuberculosis, filariasis, certain inflammatory eye affections, plague, typhoid fever, intestinal parasites, and wound infections. It has been suggested that the fly is also a factor in the spread of gonorrhea, smallpox and various skin affections.—*Exchange.*

Some Summer Dangers.

The coming of summer and its accompanying periods of great heat creates conditions prejudicial to health, which should arrest the attention of boards of health and health officers, particularly in rural districts. It is within their power, and should be the object of especial effort on their part, to reduce to a minimum the dangers to life occurring at this particular period of the year. The fact that individual effort in some instances must supplement their official work in no way lessens their obligation to protect the public health, but rather emphasizes the fact that their whole duty lies in not only the doing of things themselves, but in the teaching of their citizens to also do certain things.

The education of the people by plainly worded circulars and newspaper publications on timely topics, supplemented by the energetic efforts of health officers, will not only be the means of preventing many cases of illness and death, but will render their immediate localities pleasant places in which to live, and at the same time create a just public appreciation of the services of wide-awake, alert boards of health.

The destruction of house-flies and mosquitoes, the rigid inspection of milk with the object of preventing many of the diarrheal diseases of children, the importance of guarding water supplies and unusual care in the sprinkling of streets are, we believe, timely topics deserving of careful attention by all boards of health, particularly at this season of the year.

HOUSE-FLIES.

The common house-fly, aside from the personal annoyance its presence creates, has been conclusively shown to possess habits fraught with great danger to health and life.

Recent experiments show that beyond a reasonable doubt it is frequently the direct means of conveying the typhoid germ from open cesspools to articles of food to which it may have access.

Majors Firth and Horrocks, medical officers in the British army, made careful examinations of flies which had been permitted to crawl over stools from typhoid patients, and they were all found to contain the typhoid germs on their heads, legs, wings or bodies.

The results of the investigation of the United States army medical commission into the causes of typhoid in military camps during the Spanish-American war further demonstrate the possibilities of evil possessed by these insects. Their report states that—

“Flies were undoubtedly the most active agents in the spread of

typhoid fever. Flies alternately visited and fed on the infected fecal matter and the food in the mess-tents. More than once it happened that when lime was scattered over the fecal matter in the pits flies with their feet covered with lime were seen walking over the food. Typhoid fever was much less frequent among messes who had their tents screened than it was among those who took no such precautions."

Such an indictment should be at least sufficient to condemn the house-fly to banishment from our homes, and, if possible, to death.

How can boards of health aid in accomplishing this result?

"*First.* By using the most stringent measures to secure the perfect disinfection of all discharges from typhoid-fever cases.

"*Second.* By urging upon people the necessity of screening dwellings, protecting all food, and explaining the dangers incurred by not doing so. *Teach them to regard flies with suspicion.*

"*Third.* As flies breed most abundantly in manure piles and the droppings from horses, regulations should be adopted and enforced compelling the proprietors of livery stables and private owners of horses to cover or screen their stable refuse in such a manner that flies cannot have access to it. Germicides—chlorid of lime or similar preparations—that will destroy the eggs of the house-fly should be used freely and frequently in manure pits and stables.

"*Fourth.* Unusual care should be taken to thoroughly and frequently clean the public streets, removing all droppings from horses and treating street cleanings at the dumping-ground in the same manner as at public or private stables.*

The department will gladly send such of their pamphlets on prevention of communicable diseases as may be desired if name and address is sent to the secretary of the State Board of Health at Topeka. The following have been prepared: Tuberculosis, Typhoid Fever, Diphtheria, Scarlet Fever, and Smallpox.

Be Cheerful!

From Florida Health Notes.

In the plan of creation it is recorded that the human was the last of the animals to be brought into existence. The divine Creator is said to have viewed the different phases of the evolution from chaos to light and life, and determining that it had been beautifully and satisfactorily completed, created man. Even if only allegorically true, yet the scheme of the creation of the world, as given in the Bible, is so wonderfully conceptive of a divine love and tender consideration by which an infinite Being devised the happiness, comfort and perpetuation of him who was to be a "reflection of His

* From Virginia State Board Bulletin.

own image" that the genesis of human life is sanctified by the environment in which it first began; especially so since it appears that it was only after everything essential for the well-being of man had been prepared and laws made for the natural government of this work that the finishing touch was to be emphasized by bringing into existence a being into whose keeping and by whose superior will and reason—attributes mysteriously withheld from the other animals—the world was to be controlled and directed. It would seem, therefore, that man, then and ever afterwards, should have been grateful for this exhibition of care and should have been supremely happy and contented. Where so much is bestowed it is not expecting too much, according to a human estimate of appreciation and gratitude, that at least an acknowledgment should be shown by a cheerful spirit through all phases of living.

Cheerfulness is an attribute of the mind as well as of the heart, and is inherited as well as acquired. Like mercy, it thrice blesses him who gives as well as him who receives. It is an outward expression of a contentment and happiness within, and it is also a reflection of an humble spirit and of a disposition which thinketh no evil.

Cheerful people are generally healthy people, and therefore cheerfulness must be classed among the virtues which should be cultivated for its hygienic and sanitary influence on men and women.

Compare a bright, sunny disposition with one of a morose and sour kind, and in whose company would you prefer to be placed, aside from esthetic considerations? There can be but one answer, and the man or woman who carries in his or her countenance a contentment and an appreciation of the millions of blessings which each day come to him or to her is the individual whose company is sought after and who is always a welcome visitor. See a man or a woman who, as Kipling says, wears a smile which goes around their faces two times, and ninety-nine times out of a hundred cases you will find their digestion good, sleep tranquil, brain clear and well balanced, and, in fact, every organ of the body working harmoniously and normally.

Doubtless it is this quality of mind which is trained to view every aspect of living in its most pleasing attraction that has given impetus to a class which claim a command over the ills of life without resort to medication or drug therapeutics. A happy frame of mind, contentment in every sphere of life in which placed, and a determined purpose to make the best of every situation, will oftentimes influence the several organs of the body to so perform their

functions, normally and in accord, that in a general way the human system may be kept in perfect trim.

Suggestive therapeutics has its initiative and growth in the will-power of the individual, and cheerfulness is a feature most prominent in such a condition.

Cheerfulness is catching. The presence of a cheerful person in a household is wonderfully contributive to the happiness of all the other members. The hygienic influence of such a person cannot be too highly prized, for it has its impress which is felt day by day, and in brightening other lives it has an introactive impression on the individual himself or herself. The character of cheerful persons is enriched by the unconscious giving of their nature to assist others and to make them happier, for by constantly minimizing one's own troubles in an effort to raise the physical tone of another there will be a beautifying of our own individuality and character which will make each one of us less selfish and more generous in thought and act. A cheery spirit is like a ray of light, penetrates the minutest crack, brightens the darkness of gloom and despair and lifts a sorrow, for—

“When a bit of sunshine hits ye,
After passing of a cloud;
When a fit of laughter gits ye,
An’ yer spine is feeling proud,
Do n’t forget to up and fling it
At a soul that’s feelin’ blue,
For the minit that ye sling it
It’s a boomerang to you.”

Be cheerful!

Why Children Are Stupid.

The so-called stupidity, inattention, indifference to study, ill-temper, incorrigibility and truancy of children are in reality, in a large percentage of cases, simply the indirect result of some physical defect that influences the whole moral and mental state of the child. Such children, instead of being given extra tasks by way of punishment, the rod or the discipline of the reformatory, really need glasses to correct eyestrain, the removal of adenoids, more fresh air, healthful exercise, or the services of a good dentist. Children under eight years of age should be cared for in playgrounds, situated in parks, where nature study and systematic exercises may be carried out. Gymnasiums and forced baths are often most valuable.
—*From a lecture by Dr. H. Warren Buckler.*



**HOW W. N. HOUGH FAILED TO GET BY THE BUREAU
OF CHEMISTRY.**

From "Barrels and Bottles," May 1, 1908.

The above photograph illustrates an incident which once more demonstrates that straws show which way the wind blows and that even inanimate things have a kind of sympathy with the course of human events. Incidentally, also, it depicts a happening that brought out Doctor Wiley's enjoyment of a joke and alertness in

shooting folly as it flies. And lastly, the sequel to the incident itself shows how naturally, inevitably we might say, any reference to things alcoholic tends to throw minds otherwise sane and normal into a state where nothing but poesy affords the necessary relief. But mellifluous and sparkling as are the metrical *chefs-d'oeuvre* which resulted in this case, we feel it our solemn duty to warn their gifted authors that King Alcohol has but one official poet laureate. We feel sure that a perusal of William Mida's ode to the "Hull Thing" will convince them that however fascinating they may find the avocation of producing bacchinalian lyrics, the Midanic supremacy in this field makes it advisable that they stick to chemistry and law for human nature's daily food.

The incident caught by the camera as reproduced above occurred just after the President had issued his famous ruling regarding the labeling of whiskies, concerning which he had consulted Doctor Wiley, and one which pleased the chief of the Bureau of Chemistry much more than it pleased the general counsel of the National Wholesale Liquor Dealers' Association.

Mr. Hough was driving his forty-horse-power Panhard in fine style past the Bureau of Chemistry when, just as he came into the position shown, something gave way, and he could not go any further. At this critical moment Doctor Wiley, coming up, was accosted by him as follows:

MR. HOUGH: You will notice that I broke down in front of your office.

DOCTOR WILEY: Yes, you see you can get by everything in this country except the Bureau of Chemistry.

While Mr. Hough was struggling to start his machine, Doctor Wiley, with malice aforethought, sent a photographer across the street and took a snap-shot and sent it to Mr. Hough, with the following verse:

"Remember what you said, and my reply!
You see you could not possibly get by.
Just notice this one point in your career,
And that is, namely, that you stopped right here!"

To which Mr. Hough replied in the following lines:

"I admit you have caused interference at times
Like the 'blow-out' you pictured so well,
But you fail to portray
That I soon sped away
And left you no story to tell
Of successes which crown every effort of yours
To establish definitions unfair;
And you 'll learn when swords meet
Delay spells not defeat
For the man who left you standing there."

RELIGION.

TO move among the people on the common street; to meet them in the market place on equal terms; to live among them, not as saint or monk, but as brother-man with brother-man; to serve God, not with form or ritual, but in the free impulse of the soul; to bear the burdens of society, and relieve its needs; to carry on the multitudinous activities of the city—social, commercial, political, philanthropic—in Christ's spirit and for His ends: this is the religion of the Son of Man, and the only meetness for heaven which has much reality in it.

—Henry Drummond.

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| J. B. CARVER, M. D., - - Fort Scott. | C. H. LERRIGO, M. D., - - Topeka. |
| C. D. WELCH, Attorney, Coffeyville. | |
| S. J. CRUMBINE, M. D., Secretary. | |

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W. J. V. DEACON, Statistician, Topeka.

No. 7.

JULY, 1908.

VOL. IV.

Keep your head cool, and your heart and feet warm.

Cut down your diet about one-third, and cut out the ice-water
—you will then be enabled to stand the summer heat, feel better,
and probably live longer Try it!

N. B.—The sale of pickles processed with alum is prohibited
after September 1, 1908.

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VITAL STATISTICS

Reported to the Kansas Board of Health for June, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------------------------|--------------------|----------|-------------------|---------|------------------|---------|-------------------|---------|------------|---------|-----------|---------|
| | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| The State...total, June, 1907..... | 110 82 | 64 33 | 70 39 | 19 9 | 34 31 | 6 3 | 51 26 | 2 1 | 183 169 | 1 1 | 85 514 | 2 11 |
| Allen..... | 1 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 14 | 0 | 5 | 0 |
| *Anderson..... | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 0 | 10 | 0 | 0 | 0 |
| Atchison..... | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Barber..... | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barton..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Bourbon..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brown..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Butler..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Chase..... | 1 | 1 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| *Chautauqua..... | 1 | 1 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| *Cherokee..... | 1 | 1 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| *Cherokee..... | 1 | 1 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| *Clark..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| *Clay..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| *Cloud..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| *Coffey..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| *Comanche..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| *Crawley..... | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| *Crawford..... | 5 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 |
| *Decatur..... | 5 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 |
| *Dickinson..... | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan..... | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Douglas..... | 4 | 3 | 1 | 0 | 3 | 1 | 1 | 0 | 7 | 0 | 2 | 0 |
| Edwards..... | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Elk..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kille..... | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellsworth..... | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 |
| Finney..... | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford..... | 2 | 0 | 7 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Franklin..... | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geary..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gove..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Grant..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Gray..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Greeley..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Greenwood..... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Hamilton..... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Harper..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Harvey..... | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Haskell..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Jefferson..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Jewell..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Johnson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kearny..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kingman..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| *Kiowa..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 17 | 0 |
| Lane..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| Lincoln..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Linn..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| *Logan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lyon..... | 3 | 3 | 2 | 0 | 0 | 0 | 14 | 0 | 9 | 0 | 3 | 0 |
| Marion..... | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| Marshall..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| McPherson..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| Meade..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 8 | 0 |
| *Miami..... | | | | | | | | | | | | |
| † Mitchell..... | 1 | 1 | 8 | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 14 | 1 |
| Montgomery..... | | | | | | | | | | | | |
| * Morris..... | | | | | | | | | | | | |
| † Morton..... | | | | | | | | | | | | |
| Nemaha..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 16 | 1 | 0 | 0 |
| Neosho..... | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| * Norton..... | | | | | | | | | | | | |
| Osage..... | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Osborne..... | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| † Phillips..... | | | | | | | | | | | | |
| Pottawatomie..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Pratt..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 |
| * Rawlins..... | | | | | | | | | | | | |
| Reno..... | 1 | 1 | 0 | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Republic..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| * Rice..... | | | | | | | | | | | | |
| * Riley..... | | | | | | | | | | | | |
| Rooks..... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Rush..... | | | | | | | | | | | | |
| Russell..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| † Saline..... | | | | | | | | | | | | |
| * Scott..... | | | | | | | | | | | | |
| † Sedgwick..... | | | | | | | | | | | | |
| Seward..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| Shawnee..... | 0 | 0 | 0 | 0 | 5 | 0 | 8 | 0 | 8 | 0 | 1 | 0 |
| † Sheridan..... | | | | | | | | | | | | |
| Sherman..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smith..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Stanton..... | | | | | | | | | | | | |
| † Stevens..... | | | | | | | | | | | | |
| Sumner..... | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Thomas..... | | | | | | | | | | | | |
| * Trego..... | | | | | | | | | | | | |
| * Wabunsee..... | | | | | | | | | | | | |
| * Wallace..... | | | | | | | | | | | | |
| Washington..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Wilson..... | 3 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 |
| † Woodson..... | | | | | | | | | | | | |
| Wyandotte..... | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Cities: | | | | | | | | | | | | |
| * Atchison..... | | | | | | | | | | | | |
| * Coffeyville..... | | | | | | | | | | | | |
| Kansas City..... | 18 | 14 | 4 | 2 | 1 | 0 | 6 | 0 | 5 | 0 | 4 | 0 |
| Leavenworth..... | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 2 | 0 |
| Parsons..... | 4 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Pittsburg..... | | | | | | | | | | | | |
| Topeka..... | 6 | 6 | 3 | 2 | 7 | 0 | 0 | 0 | 9 | 0 | 15 | 0 |
| Wichita..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| State Institutions. | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

The State Board of Pharmacy is making a clean-up of the state under their law. Mr. R. H. Wolfe is the gentlemanly inspector. The registered pharmacist is now coming to his own.

DRUG ANALYSES No. XIII.

By L. E. SAYRE and PROF. ADOLPH ZIELE, Drug Analysts for the State Board of Health.

LAWRENCE, KAN., July 18, 1908.

I herewith submit a report for the BULLETIN of the State Board of Health, which embraces analyses of preparations indicated, sent to the laboratory by the drug inspectors. The greater portion of this report represents the second samples of a preparation taken from the same store. In the case of shot pepper there was presented a good instance of adulteration, whereby an inferior article was improved in appearance by the use of some extraneous material. In this instance inferior black pepper was covered with some black substance, probably graphite, and they were then burnished. The spice, after this treatment, had a shiny appearance, and each berry looked identically the same in regard to color. The artificial coating could be very easily removed by simply soaking and washing. The inspectors report that very little of these preparations were on the market at this time.

IODINE.

| Lab. No. | Insp. No. | Name and city. | U. S. P. strength. |
|----------|-----------|-----------------------------------------------|--------------------|
| 1871 | 894 | H. G. Jones, Independence..... | 100% |
| 1873 | 896 | W. T. McNaughton, Elgin..... | 86 |
| 1875 | 898 | J. H. Powell, Elgin..... | 76 |
| 1879 | 902 | Pugh Drug and Sta. Company, Independence..... | 77 |
| 1885 | 908 | Harrison & Hebranks, Independence..... | 44 |
| 1889 | 912 | J. S. Lang & Son, Coffeyville..... | 87.5 |
| 1909 | 922 | Owl Drug Company, Neodesha..... | 68.5 |
| 1911 | 984 | L. P. Galbraith, Neodesha..... | 112.66 |
| 1915 | 988 | W. P. Ball, Longton..... | 69 |
| 1919 | 942 | J. D. Petit, Elk Falls..... | 94.9 |
| 1922 | 945 | Wm. Wright, Elk City..... | 71.6 |
| 1926 | 949 | H. C. Schnoor & Co., Elk City..... | 62.3 |
| 1928 | 951 | Geo. T. Brown, Independence..... | 35.4 |
| 1931 | 954 | C. L. McAdams, Independence..... | 114.1 |
| 1984 | 989 | A. F. Gatlin, Topeka..... | 96.8 |
| 1987 | 993 | A. T. Waggoner, Topeka..... | 96.5 |
| 1992 | 996 | Wm. Cairns, Topeka..... | 149.6 |
| 1996 | 1002 | F. T. Walker, Topeka..... | 84.1 |
| 2001 | 1006 | E. S. Lee, Topeka..... | 91.2 |
| 2007 | 1015 | A. G. Ott, Topeka..... | 55.6 |
| 2011 | 1020 | U. P. Pharmacy, Topeka..... | 94.9 |
| 2015 | 1026 | P. O. Drug Store, Topeka..... | 53.2 |
| 2023 | 1303 | Cherokee Drug Company, Coffeyville..... | 68.4 |
| 2033 | 962 | Patterson & Leonard, Cedar Vale..... | 42.16 |
| 2034 | 964 | Dr. P. N. Whitney, Cedar Vale..... | 75.15 |
| 2037 | 967 | W. N. Harris, Arkansas City..... | 113.98 |
| 2040 | 973 | J. S. Cree, Arkansas City..... | 101.65 |
| 2041 | 974 | J. H. Ellis, Arkansas City..... | 59.22 |
| 2044 | 978 | Bunker & Fritz, Arkansas City..... | 115.68 |

No. 1898, Insp. No. 921. Soluble Essence of Ginger. Coffeyville Wholesale Mercantile Company, Coffeyville. The preparation is misbranded, as it states that it contains 25 per cent. of alcohol, when it really contains 38.7 per cent. of alcohol. Illegal.

No. 1910, Insp. No. 933. Oil of Wintergreen. Owl Drug Store, Neodesha. Passed.

No. 1914, Insp. No. 937. Genuine Concentrated Essence of Ginger. R. O. Holmes, Jefferson. Misbranded. Alcoholic content not stated. Contains 30.1 per cent. alcohol. Illegal.

No. 1971, Insp. No. 7087. Spirits of Nitrous Ether. C. C. Brown, Arma. Contains 2.98 per cent. of ethyl nitrite. Sub-standard.

No. 1972, Insp. No. 7090. Tincture of Arnica. C. C. Brown, Arma. Passed.

No. 1973, Insp. No. 7098. Black Pepper. Frank Manlove, Fort Scott. Passed.

No. 1974. Dr. Klein's Great Nerve Restorer. Dr. R. H. Klein, Philadelphia, Pa. Misbranded, as it claims to cure all diseases of the brain, heart and nervous system. It is an alcoholic solution of aromatic drugs, which contains quite an appreciable amount of ammonium bromide, and contains 1.1 per cent. of alcohol and 26 per cent. of total solids.

No. 1975. Pastor Koenig's Great Nerve Restorer. The Koenig Medicine Company, Chicago. An aromatic solution of drugs; contains valerian and ammonium bromide, 3.4 per cent. of alcohol, and 26 per cent. of total solids.

No. 1976. Dr. A. H. Lindley's Perfected Cure. Misbranded. Claims to cure epilepsy, St. Vitus's Dance, and other nervous diseases. A solution of aromatic drugs containing ammonium bromide, 2.2 per cent. of alcohol and 35.9 per cent. of total solids. Illegal.

No. 1977, Insp. No. 7107. Shot Pepper. Ed. Williams, Pittsburg, Kan. This spice has been coated with a preparation which colors it very black, and which also imparts a very shiny surface. This spice is not a high-grade one, and is illegal because of the artificial coating which has been used to bring a poor spice to a better appearance. Illegal.

No. 1978, Insp. No. 7115. Ground Cloves. D. G. Evans & Co., St. Louis. The microscopical and chemical examinations are quite favorable, but this is not a high-grade spice.

No. 1979, Insp. No. 7116. D. G. Evans, St. Louis. The ash content is high as well as the ash insoluble in acid. This is not a high-grade spice.

No. 1980, Insp. No. 7117. Ground Cinnamon. D. G. Evans & Co., St. Louis. Passed.

No. 1981, Insp. No. 7118. Ground Mustard. D. G. Evans & Co., St. Louis. Passed.

No. 1982, Insp. No. 7119. Ground Cloves. Pittsburg Wholesale Company, Pittsburg, Kan. The volatile ether extract is very low. The total ash and the ash insoluble in hydrochloric acid are very high. This is a very poor grade of spice.

No. 1983, Insp. No. 988. Syrup of Ferrous Iodide. Wm. S. Merrill Chemical Company, Cincinnati. Contains 4.24 per cent. of ferrous iodide. Sub-standard.

No. 1985, Insp. No. 990. Liquid Carbolic Acid. A. F. Gatlin, Topeka. Contains 72.22 per cent. of phenol. Sub-standard.

No. 1986, Insp. No. 991. Spirits of Nitrous Ether. A. F. Gatlin, Topeka. Contains .023 per cent. of ethyl nitrite. Illegal.

No. 1988, Insp. No. 994. Spirits of Nitrous Ether. A. T. Waggoner, Topeka. Contains 2.71 per cent. of ethyl nitrite. Sub-standard.

No. 1989, Insp. No. 995. Liquid Phenol. A. T. Waggoner, Topeka. Contains 77.03 per cent. of phenol. Sub-standard.

No. 1990, Insp. No. 996. Syrup of Ferrous Iodide. A. T. Waggoner, Topeka. Contains 1.76 per cent. of ferrous iodide. Illegal.

No. 1991, Insp. No. 997. Spirits of Nitrous Ether. William Cairns, Topeka. Contains .023 per cent. of ethyl nitrite. Illegal.

No. 1993, Insp. No. 999. Liquid Phenol. William Cairns, Topeka. Contains 73.11 per cent. of phenol. Sub-standard.

No. 1994, Insp. No. 1000. Syrup of Ferrous Iodide. William Cairns, Topeka. Contains 9.77 per cent. ferrous iodide. U. S. P. 1890.

No. 1995, Insp. No. 1001. Syrup of Ferrous Iodide. F. T. Walker, Topeka. Contains 4.75 per cent. ferrous iodide. Slightly sub-standard.

No. 1997, Insp. No. 1004. Spirits of Nitrous Ether. F. T. Walker, Topeka. Contains 3.08 of ethyl nitrite. Sub-standard.

No. 1998, Insp. No. 1005. Liquid Carbolic Acid. F. T. Walker, Topeka. Contains 71.19 per cent. phenol. Sub-standard.

No. 1999, Insp. No. 1006. Spirits of Nitrous Ether. E. S. Lee, Topeka. Contains 2.57 per cent. of ethyl nitrite. Sub-standard.

No. 2000, Insp. No. 1007. Syrup of Ferrous Iodide. E. S. Lee, Topeka. Contains 9.65 per cent. of ferrous iodide. U. S. P. 1890.

No. 2002, Insp. No. 1009. Liquid Phenol. E. S. Lee, Topeka. Contains 80.93 per cent. of phenol. Sub-standard.

No. 2003, Insp. No. 1011. Syrup of Ferrous Iodide. Glenwood

Pharmacy, Topeka. Contains 9.52 per cent. of ferrous iodide. U. S. P. 1890.

No. 2004, Insp. No. ——. Tincture of Nux Vomica. Glenwood Pharmacy, Topeka. Passed.

No. 2005, Insp. No. 1012. Essence of Peppermint. Glenwood Pharmacy, Topeka. The preparation was deficient in oil. Illegal.

No. 2006, Insp. No. 1019. Tincture of Arnica. A. H. Ott, Topeka. Passed.

No. 2008, Insp. No. 1016. Spirits of Nitrous Ether. A. H. Ott, Topeka. Contains .13 per cent. of ethyl nitrite. Illegal.

No. 2009, Insp. No. 1017. Liquid Phenol. A. H. Ott, Topeka. Contains 72.56 per cent. phenol. Sub-standard.

No. 2010, Insp. No. 1018. Dilute Phosphoric Acid. A. H. Ott, Topeka. Passed.

No. 2012, Insp. No. 1021. Liquid Phenol. U. P. Pharmacy, Topeka. Contains 76.95 per cent. phenol. Sub-standard.

No. 2013, Insp. No. 1022. Spirits of Nitrous Ether. U. P. Pharmacy, Topeka. Contains 2.46 per cent. of ethyl nitrate. Sub-standard.

No. 2016, Insp. No. 1027. Liquid Phenol. Post-office Drug Store, Topeka. Contains 82.9 per cent. phenol. Sub-standard.

No. 2017, Insp. No. 1029. Syrup of Ferrous Iodide. Post-office Drug Store, Topeka. Contains 2.37 per cent. ferrous iodide. Illegal.

No. 2018, Insp. No. 1030. Liquid Phenol. Capitol Pharmacy, Topeka. Contains 73.57 per cent. phenol. Sub-standard.

No. 2019, Insp. No. 1031. Lime Water. Capitol Pharmacy, Topeka. Passed.

No. 2024. Dr. Watson's New Specific for Coughs and Colds. The Quaker Medicine Company, St. Louis. Misbranded, as it claims to be a positive cure for coughs and colds. It is a saccharine solution containing tar.

No. 2027, Insp. No. 1028. Spirits of Nitrous Ether. Post-office Drug Store, Topeka. Contains 5.22 per cent. ethyl nitrite.

No. 2028, Insp. No. 7131. Spirits of Nitrous Ether. Climax Chemical Works, Chicago. Contains .031 per cent. ethyl nitrite. Illegal.

No. 2029, Insp. No. 1302. Superior Club Whiskey. Dr. W. B. Newlon, Coffeyville. Misbranded. The alcoholic content was not stated. Contains 40.8 per cent. alcohol. Illegal.

No. 2030, Insp. No. 1301. Country Club Exported Beer. M.

K. Goetz Brewery Company, St. Joseph. Misbranded. Alcoholic content not stated. Contains 5.1 per cent. alcohol. Illegal.

No. 2031, Insp. No. 1305. Beeswax. Cherokee Drug Company, Coffeyville. The preparation contained over 50 per cent. of paraffin, and is therefore illegal.

No. 2035, Insp. No. 965. Dilute Phosphoric Acid. W. N. Harris, Arkansas City. Passed.

No. 2036, Insp. No. 966. Yellow Mercuric Oxide. W. N. Harris, Arkansas City. Passed.

No. 2039, Insp. No. 972. Yellow Mercuric Oxide. J. S. Cree, Arkansas City. Passed.

No. 2042, Insp. No. 975. Dilute Nitrohydrochloric Acid. J. H. Ellis, Arkansas City. Passed.

No. 2043, Insp. No. 977. Lime Water. W. H. Lightstone, Arkansas City. The preparation was very weak and contained only about .007 per cent. of one per cent. of lime. Illegal.

No. 2045, Insp. No. 979. Yellow Mercuric Oxide. Bunker & Fritz, Arkansas City. Passed.

No. 2049, Insp. No. 981. Tincture of Arnica. G. A. Frank, Dexter. Passed.

No. 2047, Insp. No. 984. Elixir of Ammonium Valerate. W. M. Hay, Arkansas City. Passed.

Cider Vinegar.

By H. LOUIS JACKSON, Analyst for the State Board of Health.

LAWRENCE, KAN., July 18, 1908.

In view of the numerous samples of country cider vinegar coming to this laboratory which show that they are genuine cider vinegars, but which are below the legal standard in some one respect, due either to the use of unripe, partly decayed or otherwise damaged apples, or to careless or faulty methods of manufacture or storage, it is thought many farmers might be glad of correct information on the subject.

The following precautions and directions are taken from Bulletin 258, New York Agricultural Experiment Station, where in 1904 numerous experiments were carried out in the making of cider vinegar by "home made" methods. The following conclusions were reached as a result of this work, which was continued for seventy-two months in order fully to study the effect of different methods of storage, various temperatures and effect of time.

Conditions Commonly Producing Cider Vinegar Below Standard.

Several different conditions may cause the production of cider vinegar low in acetic acid, among the more common of which are the following:

1. Poor apple juice.
2. Conditions unfavorable to the necessary fermentation processes.
3. Lack of proper care after acid is formed.

Poor apple juice is one source of poor vinegar. By *poor* apple juice we mean apple juice containing less than a normal amount of sugar; that is, less sugar than would be sufficient under normal conditions of fermentation to produce vinegar containing 4.5 (4.0 per cent. in Kansas) per cent. of acetic acid. We should be able ordinarily to produce about 50 to 55 parts by weight of acetic acid for each 100 parts of sugar present in the fresh juice. Hence, to produce cider vinegar with the amount of acetic acid required by the legal standard in New York, we should need to use apple juice containing 8.25 to 9 per cent. of sugar.

There are five different conditions under which apple juice may contain less than the amount of sugar indicated: (1) The fruit may be unripe; (2) the apple juice, normal at the start, may be watered; (3) the juice may be made by treating the pomace with water, allowing to stand, and pressing a second time; (4) the apples may be badly decayed; (5) apples may be used which normally contain, even when ripe, an insufficient amount of sugar according to analyses made in other states. Among such, according to the results given in table II, are the following: Ben Davis, Fanny, Gana, Loy and Montreal Beauty Crab. We do not mean to say that these varieties never contain enough sugar for cider-making, but simply that the samples analyzed did not.

Conditions Unfavorable to the Necessary Fermentation Processes.

We will mention the following conditions as most common among those that unfavorably affect the processes of fermentation: (1) Dirty and decayed fruit; (2) unclean barrels; (3) too low temperature; (4) lack of air, due either to filling the barrel too full or stopping the bung-hole.

(1) *Dirty fruit.* It is quite common that the apples used for vinegar-making are refuse left lying on the ground until they become covered with soil and more or less decayed. Under such conditions, there is serious danger of getting into the apple juice organisms that will interfere with the regular alcoholic and acetic fermenta-

tions, particularly the latter, either by lessening the amount of the products of those fermentations or by producing undesirable flavors.

(2) *Unclean barrels.* Barrels or casks are frequently used for vinegar-making which are not previously cleaned, no matter what their previous condition or use. Undesirable organisms may be brought into contact with the apple juice in this way.

(3) *Storing apple juice at too low temperature.* Many, if not most, farmers place their barrels of apple juice at once in the cool temperature of a cellar, where it will usually require six months or more to complete the alcoholic fermentation. The material is left at the same temperature for the acetic fermentation, which takes place with extreme slowness. In some cases it may require three years or more before the acetic fermentation is completed under these conditions, and ordinarily the time is two years or more.

(4) *Lack of air.* The acetic fermentation requires the presence of air, and this may be excluded by filling the barrel too full or by putting the bung in tight or by doing both at once. It often happens that the conditions have all been favorable and that the vinegar is apparently sour enough; the bung is then tightly stoppered, when an analysis would show less than 4 per cent. of acid. Before closing the barrel it would be well to have the amount of acid determined as soon as the vinegar seems sufficiently sour. When the barrel is thus tightly stoppered before the formation of acid is completed, the fermentation soon ceases and the amount of acid does not increase further.

Lack of Proper Care after Acid is Formed.

When the alcoholic fermentation is completed and the cider has become commercial cider vinegar of good quality, destructive fermentation of the acid may be encouraged by leaving the bung-hole open and the barrel only partially full.

DIRECTIONS FOR HOME MANUFACTURE OF CIDER VINEGAR.

Kind of apples to use. Only ripe apples should be used, possessing a sugar content of not less than 8.5 per cent. Most varieties of apples commonly available possess the requisite amount of sugar when ripe, but not when green. The apples should not be decayed or overripe, because the amount of sugar is lessened in such apples. The apples should be clean when gathered, and if not, they should be made so by washing. The objection to dirt in the apple juice is the danger of introducing forms of fermentation that will interfere with the normal alcoholic and acetic fermentations which are desired. One objection raised to washing apples is the liability to

remove the germs that cause the desired forms of fermentation. While in our own practice we have not met with such difficulty, it is preferable that the apples shall, if possible, be clean when gathered.

Preparation of apple juice. In the grinding and pressing of the apples care should be taken to observe ordinary precautions of cleanliness. In many cases it is the practice to add water to the apple pomace after pressing, let it stand a while and press again. This treatment yields an additional amount of juice, which, however, does not contain the requisite amount of sugar to make good vinegar, provided the first pressing has been efficient. Avoid the use of juice made from second pressing.

Putting apple juice in barrels. When practicable, it is a good plan to store the freshly pressed apple juice in some large receptacle and allow it to stand a few days before putting it into barrels. In this way considerable solid matter held in suspension will settle before the liquid is placed in casks. The casks used should be well cleaned, thoroughly treated with live steam or boiling water, and should not be over two-thirds or three-fourths filled with apple juice. The bung should be left out but a loose plug of cotton may be placed in the hole to decrease the evaporation and prevent dirt falling in. The bung should be left out until 4.5 to 5 per cent. of acetic acid has formed.

Management of alcohol fermentation. When the freshly pressed apple juice is at once placed in ordinary cellars, where the temperature during winter does not go below 45° or 50° F., the alcoholic fermentation is complete in about six months, assuming that the work is begun in October or November; though 80 or 90 per cent. of the alcohol is formed in half this time or less. By having the fermentation take place at a temperature of 65° or 70° F. the time can be considerably reduced; however, it is not desirable to have the alcoholic fermentation take place much above 70° F., since the loss of alcohol by evaporation is increased. By the addition of yeast to the fresh apple juice the fermentation can be completed in three months or less, especially if the temperature is near 65° or 70° F. It is suggested that one Fleischmann's compressed yeast cake, or an equivalent, may be used for five gallons of apple juice, if one desires to use yeast. The yeast-cake is stirred with a cup of water and after complete disintegration is mixed with the juice. Whatever form of yeast is used it should be fresh. Vinegar or "mother" should never be added to apple juice.

Management of acetic fermentation. When the alcoholic fer-

mentation is completed, it is well to draw off the clear portion of liquid, rinse out the cask, replace the clear liquid, add two to four quarts of good vinegar containing more or less "mother," and place at a temperature of 65° to 75° F. The acetic fermentation occupies from three to eighteen months or more, according to the conditions under which the fermentation is carried on. When the apple juice is stored in cool cellars and left there until it becomes vinegar of legal standard, it requires from twenty-one to twenty-four months or even more. When the alcoholic fermentation is allowed to take place in a cool cellar and the casks then removed to a warmer place, the time of vinegar formation may be reduced from that given above to fifteen to eighteen months. Where the alcoholic fermentation is hastened by the use of yeast and the acetic fermentation favored by the proper temperature and addition of a vinegar "starter," it is possible to produce good merchantable vinegar in casks in six to twelve months. In vinegar factories the formation of acetic acid is greatly hastened by the use of "generators," in which the alcoholic liquid is brought into intimate contact with a large supply of air. In the hands of the ordinary farmer, making only a few barrels of cider, these generators would probably not be found entirely practicable in every way.

Care of cider vinegar. When the acetic fermentation has gone far enough to produce 4.5 to 5 per cent. of acetic acid, then the barrels should be made as full as possible and tightly corked, in order to prevent destructive fermentation of acetic acid and consequent deterioration of the vinegar.

An Unusually Extensive Milk-borne Outbreak of Typhoid Fever in Jamaica Plain.

From Monthly Bulletin, Massachusetts State Board of Health.

On March 31, 1908, after several months of practical freedom from typhoid fever, a case of that disease occurred in Jamaica Plain, followed on April 1 by two more, on April 2 by one, and on April 3 by two. On April 4 inquiry was made as to the possibility of a common cause, and it was learned that more cases were being reported. The number reported for that day proved to be 17. On Monday, April 6, the number reported was 73 (which number includes the cases of two days, there being no mail delivery on Sunday), and during the next five days the numbers reported were, respectively, 54, 38, 26, 25 and 17. From Monday, April 13, to Saturday, April 18, inclusive, the numbers reported were, respect-

ively, 32 (Sunday and Monday), 7, 17, 5, 13 and 5. During the next week the numbers were, respectively, 12 (Sunday and Monday), 4, 2, 4, 10 and 4. Between Monday, April 27, and May 15 the total number of cases reported was 30, a majority of which (18) were undoubtedly contact cases. There were thus reported during this period of about six weeks no fewer than 410 cases of typhoid fever, in which total are not included the cases of two persons who came into the district already ill and a number which in the excitement naturally caused were wrongly diagnosed as typhoid.

So sudden an explosion, occurring in a district hitherto practically free from the disease, suggested, before it had reached its height, the probability of a common milk supply. It was learned on April 5 that 23 of the 24 cases already reported were on the routes of two milkmen. The 73 cases reported on April 6, the 54 reported on April 7, all but 6 of the rest of the cases reported during that week, and all but 12 of the cases reported during the second week were also on the same milk routes.

Of the 410 cases reported, 348 primary and 23 secondary cases proved to be in families supplied by these two men, who hereafter will be designated as F. and Q. Since the number of cases occurring on each route was about the same (primary, 175 and 173; secondary, 6 and 17, respectively), and for reasons which will presently appear, the two supplies are presented as one in the accompanying chart, which illustrates the characteristically explosive nature of a milk-borne outbreak. There were twenty-nine cases in which no history of the use of their milk could be obtained, and seven in which there was a possibility that the victims had on some one or another day drunk it. Those thirty-six persons were among the regular customers of no fewer than fifteen different milkmen. More than half of them were adults, who, in going about freely and perhaps lunching and dining in restaurants and in the homes of their friends, may have consumed some of the same milk, or may have ingested the infection with some other article of food; and all but three of the remainder were children of school age, who also doubtless visited about to some extent.

Age periods. The persons seized in this outbreak were distributed according to age as follows:

| | | | |
|---------------------|----|---------------------|-----|
| 1 to 5 years..... | 77 | 26 to 40 years..... | 25 |
| 6 to 10 years..... | 75 | 41 to 45 years..... | 15 |
| 11 to 15 years..... | 49 | 46 to 50 years..... | 9 |
| 16 to 20 years..... | 42 | Above 50 years..... | 13 |
| 21 to 25 years..... | 44 | Age not stated..... | 8 |
| 26 to 30 years..... | 34 | | |
| 31 to 35 years..... | 24 | Total..... | 410 |

Number of households invaded. The 410 cases were distributed as follows:

Single cases in 216 households divided as to milk supply—

| | |
|------------------------|-----|
| F..... | 97 |
| Q..... | 86 |
| All other milkmen..... | 33 |
| Total..... | 216 |

In 79 households multiple cases occurred—

| | | |
|--------------|--------------------|--------------------------|
| 2 cases..... | 57 households..... | total, 114; contacts, 12 |
| 3 cases..... | 12 households..... | total, 36; contacts, 7 |
| 4 cases..... | 7 households..... | total, 28; contacts, 5 |
| 5 cases..... | 2 households..... | total, 10; contact, 1 |
| 6 cases..... | 1 household..... | total, 6; |
| Totals... | 79 | 194 25 |

Of the total number of contact cases (26), 23 occurred in households supplied by F. and Q.

The milk supply of F. and Q. In common with eight other milkmen, Messrs. F. and Q. obtained their supply from the car of a contractor who derived this particular car-load from eight towns, in none of which had a case of typhoid fever occurred during the previous three months, excepting that of an Italian laborer in no way connected with milk production. Each milkman who went to this car received milk from the same dairies regularly, and the fact that there was but one dairy whose product was given to both F. and Q. was naturally suggestive that the infective material came to Jamaica Plain from this particular dairy. Inquiry at the place of production revealed that not only was there no history there of any sickness whatever, but also the interesting fact that the owner was marketing about 60 cans a day, only 40 of which were sent to Jamaica Plain, 20 being sold daily to a dealer in another place, where there had been but one case of typhoid fever, and that one not on his route. It was evident, therefore, that the infection did not come from the premises of this producer.

Among the first victims of the disease to be reported was the milkman F. himself (April 4). It appears that on or about March 20 F. consulted his family physician, who concluded that F. was merely tired and overworked. From that time until April 2 F. felt ill, but was able to attend to his daily work, which included the general handling of his milk. On April 1 he consulted his physician again, and at that time his temperature was 100°, and he was suffering with diarrhoea. On April 2 a diagnosis of typhoid fever was made, and he took to his bed. On April 10 he died, and the autopsy performed by Dr. George B. Magrath revealed, among other lesions, an ulcer, 1.5 by 2 centimeters, at a point about 60 centimeters below the ileocecal valve, which ulcer, being of not less

than three weeks' development, indicates that F. must have been suffering from typhoid fever as early as March 20. Other lesions observed in the intestines—numerous ulcers of varying size—were of more recent origin, and represented, according to Doctor Magrath, the conditions found toward the end of the second week.

Considering that F. had been ailing for a period of about two weeks before he took to his bed, but not to such an extent as to prevent him from handling the milk, it is not difficult to surmise in what manner the supply became contaminated with the exciting cause of the disease, for the hands of the average milkman do not receive the same degree of care as those of an operating surgeon, and with more or less frequent occasion for interrupting the work of handling the milk in order to respond to natural calls, specific contamination, first of the fingers and then of the milk, is very likely to occur.

With the supply of Q., however, the connection is by no means clear. It was reported that Q. received from the dairy which they had in common only those cans which F. left for him, after tasting all and selecting those which he wished for his own trade. This, however, is denied on apparently good authority, and, instead, it is said that on only two occasions, namely, March 15 and March 18, did F. precede Q. at the car. It is further stated that although each can was tasted before acceptance, those that were rejected were set aside and not delivered to Q. However this may be, and whether or not F. had an opportunity to infect the milk of Q. on either of these two days or on any subsequent day, it is certain that there was the greatest possibility of an interchange of cans between F. and Q., for it was the custom of each to return the cans to the car washed, but by no means sterilized; and after they were filled at the dairy and returned, Q. was as likely as F. to receive cans which had been supplied to and handled and returned by F. Certain it is that the first infection did not occur at the place of production and was not due to the fault of the farmer; and equally certain is it that F., during two weeks of ambulant typhoid fever, had ample opportunity to infect his supply and to reinfect it again and again, and to spread the infection to Q.'s supply through the non-sterilized cans of the contractor, which they used in common.

Look out for catarrh powders containing cocaine. Dealers selling cocaine preparations may get themselves into trouble.

WORK.

By HENRY VAN DYKE.

Let me but do my work from day to day,
In field or forest, at the desk or loom,
In roaring market-place, or tranquil room;
Let me but find it in my heart to say,
When vagrant wishes beckon me astray,
"This is my work; my blessing, not my doom.
Of all who live, I am the one by whom
This work can best be done in the right way."

Then shall I see it not too great, nor small,
To suit my spirit and so prove my powers;
Then shall I cheerfully greet the laboring hours
And cheerfully turn, when the long shadows fall
At eventide, to play, and love, and rest,
Because I know for me my life is best.

BULLETIN

OF THE

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Published Monthly at the Office of the Secretary of the Board, Topeka, Kan

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No. 8.

AUGUST, 1908.

VOL. IV.

The most valuable asset of any city—a wholesome water-supply.

A clean and safe milk produced in a filthy, unsanitary dairy is
an impossibility.

Have you educated yourself to read the labels?

We expect also to “swat” the oyster that may appear loaded
with water.

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Uses of Color in Imitation Cider Vinegar, page 201.
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To the Stork, page 206.

VITAL STATISTICS

Reported to the Kansas Board of Health for July, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| The State...total, July, 1907..... | 56 75 | 48 51 | 137 163 | 22 25 | 22 43 | 4 8 | 30 14 | 2 2 | 61 76 | 0 1 | 9 74 | 1 4 |
| *Allen | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Anderson | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Atchison | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Barber | 1 | 1 | 3 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| Barton | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bourbon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Brown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Butler | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Chautauqua | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Cherokee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cheyenne | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Clark | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Clay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cloud | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coffey | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Comanche | 3 | 3 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cowley | 4 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Crawford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Decatur | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Dickinson | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Douglas | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Edwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Elk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Ellis | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellsworth | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finney | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Franklin | 0 | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Geary | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Grant | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gray | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Greeley | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Greenwood | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Hamilton | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Harper | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Harvey | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Haskell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Jackson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Jefferson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Jewell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Johnson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Kearny | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kingman | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| †Kiowa | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Lane | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Leavenworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Lincoln | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Linn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Logan | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 2 | 1 | 0 | 0 | 0 |
| Lyon | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Marion | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marshall | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| McPherson | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| Meade..... | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Miami..... | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell..... | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 0 | 7 | 0 | 0 | 0 |
| Montgomery..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Morris..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| †Morton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Neosho..... | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Norton..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Osborne..... | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Phillips..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Pratt..... | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| Rawlins..... | 0 | 0 | 5 | 2 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Rice..... | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Riley..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rooks..... | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Scott..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Sedgwick..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| †Seward..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shawnee..... | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman..... | 0 | 0 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Smith..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stanton..... | 2 | 2 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stevens..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sumner..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Thomas..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Trego..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wabaunsee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wallace..... | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Washington..... | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wilson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Woodson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wyandotte..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| *Atchison..... | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Coffeyville..... | 11 | 15 | 16 | 2 | 3 | 1 | 4 | 0 | 1 | 0 | 0 | 0 |
| Kansas City..... | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth..... | 6 | 4 | 2 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| Parsons..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pittsburg..... | 7 | 6 | 1 | 0 | 4 | 0 | 1 | 0 | 7 | 0 | 5 | 0 |
| Topeka..... | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Wichita..... | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| State Institutions. | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

Have you tested your cow for tuberculosis?

Are you interested in the campaign for clean, wholesome milk?

FOOD ANALYSES No. XVII.

By E. H. S. BAILEY, Ph. D., Chemist Board of Health, and Prof. H. L. JACKSON, Food Analyst.

HAMBURG STEAK.

No. 5028*a*. A sample of Hamburg steak taken in Rosedale. Contained sulfites as preservatives. Illegal.

NOTE.—Sulfites in meat make the meat appear fresh-cut when it is stale, prevent the appearances and odors due to spoiling, but do not prevent the development of toxic poisons which have caused death. Spoiling of food is our only danger signal that it should not be eaten, and preservatives hide the signal but do not remove the danger.

APPLE BUTTER.

No. 3183. Manufacturer's name omitted. Packed for Spratlin & Anderson, Denver, Colo. Label reads, "Purity Brand Apple Butter." Benzoate of soda as preservative is present and stated. This butter is very gritty and contains sand and starch. It is clearly misbranded, for it is made from refuse and partly ripe apples, which could not have been even washed, as there was sand present. It has no right to the name "Purity." Really pure products packed under cleanly conditions do not need and should not contain preservatives. Illegal.

No. 5039. Manufacturer, St. Louis Syrup and Preserve Company, St. Louis, Mo. Label reads, "Clymer's Apple Butter, Absolutely Pure." It contains benzoic preservative and starch, and is therefore not "absolutely pure." The word "pure" can never be truthfully used when a preservative is present. Illegal.

No. 5124. Preserved Strawberries. Purchased of The Eagle Store, Lincoln, December 12, 1907, by Mr. Kleinhans, inspector. Nothing special was found wrong with these canned strawberries, except that, judged in comparison with the housewife's product, the words "Extra Fancy Preserved" and "High Grade" would be too great a claim, and may be considered misbranding. True preserves contain more sugar than did these. Manufactured by Erie Preserving Company, Buffalo and New York. Passed.

No. 3187*a*. Milk, purchased of the Peerless Restaurant, Lawrence, August 4. Contained 5 per cent. butter-fat, but was 36.6 per cent. short measure, as a quart was asked for. The night before a sample was bought and tested, and showed only 2.7 per cent. butter-fat, which probably resulted from dipping out milk all day without proper stirring, thus removing the cream. Total solids not fat were normal.

No. 1306. Vinegar. This was selling for apple cider vinegar, but is adulterated. As it is a case for prosecution, names are withheld at present.

No. 3184. "Cream Corn." This can of corn was examined for preservatives, sweetener and "soaked corn." It was free from same, but is misbranded.

No. 7027a. Canned Peas. They were examined for "soaked peas." Passed.

No. 1291. Purchased May 7, 1908, of J. S. Hill, Petrolia, by Mr. Tilford, inspector. Manufacturer, Chanute Bottling Works, Chanute. Label reads, "Jersey Cream Soda—contains no Dairy Products." Under regulation 15, section 8h, this is held to be misbranding. Illegal.

SIRUPS.

No. 3500a. This is a straight cane-sugar sirup such as any housewife could make, and as it claims to be a sugar sirup only, it is passed.

No. 7028. Purchased at Garden City, of Carter & Font, by Mr. Pike, inspector. Label, "Canada Sap, Maple Syrup, Pure." Manufacturer, Soudder's Syrup Company, Chicago. This is about three-fourths white sugar sirup and one-fourth maple sirup. It was formerly illegal but is now marked maple and cane. In fairness to the consumer the label should show the proportions of each.

FLAVORING MATERIALS.

No. 1293. Purchased by Mr. Tilford, inspector. Manufacturer, Chanute Wholesale Grocery Company, Chanute. Label reads, "Double Flavoring Extract of Raspberry." The usual mixture of chemical ethers, alcohol and coal-tar dye; has no relation to raspberry, except in name. Illegal.

No. 1299. Purchased May 15, 1908, of R. F. Mitchell, Aliceville, by Mr. Tilford, inspector. Packed for J. N. Brown & Co., Atchison. Label reads, "Brown's Superior Banana Flavor." It should be colorless as it is in the same class with No. 1293. It contains a yellow coal-tar dye. Illegal.

No. 5263. Purchased May 22, 1908, of Hindman & Sons, Topeka, by Mr. Tilford, inspector. Manufacturer, Price Flavoring Extract Company, Chicago. Label reads, "Perfected German Flavor of Raspberry. Full measure, 2-oz." It is short measure to the extent of 15 per cent. Same class as Nos. 1293 and 1299, but heavily loaded with color. The claim "One teaspoonful to the pint

or pound will give the delicious flavor of the fruit" was found to be wholly false when tried. Only a slight sour taste and the odor and taste of the chemical ethers were apparent.

•
LEMON EXTRACT.

No. 1034-A. "Dr. Fenner's Extract of Lemons." "Contains of Grain Alcohol 80 per cent., and Oil of Lemon, Lemon Peel and Water." However, nothing is said about its containing only 2.3 per cent. of lemon oil. Illegal.

No. 7043. Purchased January 10, 1908, of C. J. Gram, Halstead, by Mr. Pike, inspector. Manufacturer, Hanley & Kinsella C. & S. Company, St. Louis, Mo. Label reads, "H. & K. Brand Pure Triple Extract of Lemon." It should contain 15 per cent. lemon oil and does contain 4.7 per cent. It is therefore 69 per cent. below strength. Illegal.

No. 1311. Purchased June 8, 1908, from Guss Cline, Neal, by Mr. Tilford, inspector. Manufacturer, Royal Remedy and Extract Company, Dayton, Ohio. Jobber, Iola Wholesale Grocery Company, Iola. Label reads, "Sander's Elegant Flavoring Extracts, Regular Lemon." This sample contained no oil of lemon whatever. Illegal.

No. 1297. This sample contained a legal amount of lemon oil and was passed.

No. 1296. Purchased of C. L. Knowlton, Geneva, by Mr. Tilford, inspector. The box containing the bottle was labeled "Shepard's Double Strength Extract of Lemon," but when taken home and the bottle removed one would see "Shepard's Economical Terpeneless Lemon Flavor." Its economy can well be questioned, except that the manufacturer economized in its production. Manufacturer, Shepard Baking Powder Company, St. Louis. Contains a yellow coal-tar dye. Illegal.

No. 5262. Strawberry Flavor. Purchased by Mr. Kleinhans, inspector, May 22, 1908, from Weiss & Co., Topeka. Manufacturer, Price Flavoring Extract Company. Label reads, "Perfected Flavoring Extract Artificial Strawberry 2 oz." Contents of the bottle is 13.6 per cent. short measure. Illegal.

CATSUP.

No. 7146. "Hoffman House Catsup." Preserved with benzoate of soda, which is declared.

JELLY.

No. 5061. Purchased October 22, 1907, of G. A. Guenther, Lawrence, by Mr. Kleinhans, inspector. Manufacturer, Emery Food

Company, Chicago. Label reads, "Pure Fruit Jelly, Strawberry Flavor, guaranteed to contain only pure strawberry juice, apple juice, granulated sugar." Contains starch to thicken it and make it imitate a pure fruit jelly. Misbranded. Illegal.

No. 5119. Purchased November 11, 1907, of L. B. Duff & Sons, Horton, by Mr. Kleinhans, inspector. Manufacturer, National Manufacturing Company, St. Joseph, Mo. Label reads, "Empire Brand Imitation Plum Jelly. Serial No. 1014." Contains coal-tar dye to color it and starch to thicken it, and over 60 per cent. glucose. Illegal.

No. 5120. Purchased November 25, 1907, of John Stahl, Horton, by Mr. Kleinhans, inspector. Manufacturer, National Manufacturing Company, St. Joseph, Mo. Label reads, "Banner Jams, Imitation Fruit Preserves. Quince. Serial No. 1014." Consists of starch, glucose (about 70 per cent.), and salicylic acid compound as preservative. Illegal.

NOTE.—The housewife does not need to use preservatives in jams or other canned products, because she uses sound fruits and puts them up under sanitary conditions.

No. 6014. Purchased December 16, 1907, of P. B. Taylor, Webber, by Mr. Bell, inspector. Manufacturer, M. T. Hamilton, city not known. Label reads, "Mt. Hamilton Brand, Gooseberry Flavor, Blended Fruit Juice Jelly." Made of apple juice and starch.

NOTE.—When the producer hides from the purchaser that his product is largely corn-starch it becomes the duty of the analyst to inform the public..

No. 7144. Purchased March 3, 1908, from Pratt & Co., Mulberry, by Mr. Pike, inspector. Manufacturer, National Manufacturing Company, St. Joseph, Mo. Label reads, "Banner Jams, Raspberry Compound, Imitation Fruit Preserves." Contains glucose, about 70 per cent., and reacts strongly for salicylic acid compound preservative. Colored with coal-tar dye. Illegal.

NOTE.—See note to No. 5120.

PUDDING PREPARATIONS.

No. 5022. Purchased October 8, 1907, from Guymn Petro Mercantile Company, Hutchinson. Manufacturer, D-Zerta Food Company, Rochester, N. Y. Label reads, "D-Zerta Strawberry Pudding," which is misbranding, as it contains no strawberry. Added color not declared. Illegal. Consists of starch, sugar and color, and is nothing more nor less than a corn-starch pudding when made according to directions.

Nos. 5023, 5024, 5079, 5084, 5134. Various dessert preparations

under well-known trade names, consisting of gelatin, sugar, citric acid and coloring.

NOTE.—If inferior gelatin is used, it is easily covered up by the added color and the sour of the acid. When gelatin is bought as such one can see by its color and flavor whether it is of good quality or not.

No. 1182. Purchased by Mr. Tilford, inspector. Manufacturer's name not given. Manufactured for Fort Scott Wholesale Grocery Company, Fort Scott. Label reads, "High Grade Flavoring Extract of Vanilla, 7 per cent. beans." Contains no vanilla bean extractives (resins) and is colored with caramel. Illegal.

No. 7002. Purchased April 18, 1907, of Wells Bros. Commission Company, Coffeyville, by Mr. Pike, inspector. Label reads, "Standard Extract of Vanilla." No vanilla resins. Illegal.

No. 5075. Purchased December 29, 1907, from Shirley Bros., Chanute, by Mr. Kleinhans, inspector. Manufacturer, Gillett's Chemical Works, Chicago. Label reads, "Standard Concentrated Extract of Vanilla." Also, "Color is no indication of strength. Its natural color, obtained from natural fruits, is absolutely pure. Standard strength." Illegal.

NOTE.—The public need not be led astray by such strong claims, for it contains no vanilla resins, therefore was not made from vanilla beans. It is not absolutely pure, is not standard strength, is not concentrated, and is not an "extract of vanilla." Prunes are natural fruit, and prune juice is a favorite coloring matter in bogus vanilla extracts.

5086. Purchased November 8, 1907, of N. A. Kent & Co., Pittsburg, by Mr. Kleinhans, inspector. Manufacturer, Interstate Grocery Company, Joplin, Mo. Label reads, "Interstate Grocery Co. Flavoring of Vanilla." A sticker on the neck of the bottle makes all safe by saying, "This flavoring is composed of vanillin and coumarin, ethyl alcohol, water, and color." It should be labeled, therefore, "Artificial vanillin and coumarin flavor." The word vanilla is not allowable in such connection.

No. 5132. Purchased December 9, 1907, of Decatur County Coöperative Association, by Mr. Kleinhans, inspector. Manufacturer, Paddock Coffee and Spice Company, Kansas City, Mo. Label reads, "Paddock's Plymouth Brand Vanilla Flavor." Made from vanilla beans, vanillin, coumarin, tonka beans, colored with caramel. Contains no appreciable vanilla resins. Illegal.

NOTE.—The labeling is a clear attempt to deceive the purchaser. Perhaps one vanilla bean was used so that its name could be used, but to all intent this is an artificial vanillin flavor, and should be so labeled. It should not be colored, as that also covers up its artificial nature and makes it look like a vanilla extract.

No. 7032. Purchased November 9, 1907, of J. C. Fyfe, Comiskey, by Mr. Pike, inspector. Manufacturer, A. B. Seelye & Co., Abi-

lene. Label reads, "Dr. Seelye's Triple Extract of Vanilla. Recommended for their absolute strength and purity." No vanilla resins. Illegal.

No. 7044. Purchased January 10, 1908, of C. J. Gram, Halstead, by Mr. Pike, inspector. Manufacturers, Hanley & Kinsella, St. Louis, Mo. Label reads, "H. & K. Brand, Pure Triple Extract Vanilla." Contains no vanilla resins. Artificially colored. Illegal.

NOTE.—This product, like many others, claims by the word "triple" to be three times as strong as a regular legal article, while it is not even a true vanilla extract of single strength. It is no worse, however, than plenty of other products of the same class. There is only one word that properly describes all of them, and that is "fraud." All these products containing no vanilla resins are simply artificial vanillin flavor, colored with caramel or prune juice. If honest, they would be so labeled. They should be sold colorless as they are made, but the brown color is added to make the public believe they are made from vanilla beans, which are expensive and give a dark brown extract. The fraud becomes known when one learns that these artificial vanillin flavors cost only one-ninth to one-tenth as much for the raw material as do genuine vanilla extracts, while to make the genuine article much time and expensive apparatus are required, and skilled workmen. The artificial product is quickly and easily made, and without any special apparatus. That is why we find so many firms producing vanillin flavor and labeling it after the high-priced vanilla extract.

Uses of Color in Imitation Cider Vinegar.

Read at the Eleventh annual convention of State and National Food and Dairy Departments, Mackinac Island, August 4, 1908, by S. J. CRUMBINE, M. D.

By long-continued use, the consuming public has been brought to think and believe that the only genuine and wholesome vinegar is that fermented from the juice of apples, and known as apple or cider vinegar.

This vinegar is usually of a brownish-yellow color, which color is so characteristic as to be the principal and often the only means of its identification by the average consumer. Thus any other vinegar that carries a color in appearance like that of cider vinegar is purchased by the vast majority of people without question, in the belief that it is indeed cider vinegar. This condition has at once invited many manufacturers to place upon the market a vinegar colored in imitation of cider vinegar, by the addition of caramel coloring, added either before or after its manufacture, or by the selection of such materials as would impart the desired color to the finished product. In either case the intention seems to be to imitate cider vinegar, and thus permit the retail dealer to deceive the purchaser; all of which is contrary to the spirit if not the letter of the national and state food and drug laws.

It is admitted that the principal offender is the retailer who sells

such products as cider vinegar; nevertheless, the manufacturer is accessory to the fact, and must stand at least morally responsible in furnishing a product to such dealers, with the absolute knowledge of and assent to such deception, regardless of the fact that the provision of the law as to proper branding may have been fulfilled.

It is not assumed that vinegar may not be made of any material which will produce a pure and wholesome product, but it is asserted that a selection or processing of any material for the express purpose of making a product that will carry a color in imitation of cider vinegar should be considered to be, and is, classed with such products as have added color, and labeled and branded accordingly.

Regulation 21, paragraph *e*, of the national food and drugs act declares that "a color or flavor cannot be employed to imitate any natural product, or any other product of recognized name and quality." This regulation would seem to exclude the use of added color in vinegar; yet I am not aware that this regulation, so far as it applies to vinegars, or any other food products, has been enforced, all of which makes it exceedingly difficult, if not well-nigh impossible, to enforce in the states, where the state and federal laws are alike, without a specific statutory enactment.

The Kansas State Board of Health, realizing this difficulty, and believing also that the retailer was the principal offender, decided to place the burden of giving the purchaser the required information under the law upon the shoulders of the retailer, and accordingly the following rule was adopted:

"By the standards promulgated by the secretary of the United States Department of Agriculture and by the Kansas State Board of Health, the term 'vinegar,' when used without qualification, is held to mean cider vinegar, and the sale of any other kind under that name is misbranding.

"Vinegars artificially colored or made from materials especially chosen to impart a color similar to that of cider vinegar are held to be imitations of cider vinegar, unless each package, wholesale and retail, as delivered to the purchaser, is distinctly marked by a label which states the true nature of the article."

It is not intended to discuss the relative purity or wholesomeness of vinegars. Suffice it to say that these various kinds of products should be sold on their own merits, and in their natural colors, and once the consuming public becomes aware that there are other wholesome vinegars besides cider vinegar, and becomes acquainted with the distinctive color of such product, deceptive methods will give way to those of fair competition, and a personal choice by the consumer based on quality, flavor or price.

International Congress on Tuberculosis.

President Roosevelt has accepted the presidency of the International Congress on Tuberculosis. His letter to Dr. Lawrence F. Flick, chairman of the committee of arrangements for the congress, follows:

THE WHITE HOUSE, WASHINGTON, May 12, 1908.

SIR—It is with great pleasure that I accept the presidency of the "International Congress on Tuberculosis," which is to meet in this city on September 21, 1908, and extend its session to October 12, 1908. Official duties, however, may prevent my presiding at the initial meeting of the congress, in which case I will deputize Secretary Cortelyou.

The importance of the crusade against tuberculosis, in the interest of which this congress convenes, cannot be overestimated, when it is realized that tuberculosis costs our country two hundred thousand lives a year, and the entire world a million lives a year, besides constituting a most serious handicap to material progress, prosperity, and happiness, and being an enormous expense to society, most often in those walks of life where the burden is least bearable.

Science has demonstrated that this disease can be stamped out, but the rapidity and completeness with which this can be accomplished depend upon the promptness with which the new doctrines about tuberculosis can be inculcated into the minds of the people and engrafted upon our customs, habits, and laws. The presence in our midst of representatives of world-wide workers in this magnificent cause gives an unusual opportunity for accelerating the educational part of the program.

The modern crusade against tuberculosis brings hope and bright prospects of recovery to hundreds and thousands of victims of the disease who under old teachings were abandoned to despair. The work of this congress will bring the results of the latest studies and investigations before the profession at large and place in the hands of our physicians all the newest and most approved methods of treating the disease—a knowledge which will add many years of valuable life to our people and will thereby increase our public wealth and happiness.

The International Congress on Tuberculosis is in the interest of universal peace. By joining in such a warfare against a common foe the peoples of the world are brought closer together and made to better realize the brotherhood of man; for a united interest against a common foe fosters universal friendship. Our country, which is honored this year as the host of other nations in this great gathering of leaders and experts and as the custodian of the magnificent exhibit which will be set up by the entire world, should manifest its appreciation by giving the congress a setting worthy of the cause, of our guests, and of ourselves. We should endeavor to make it the greatest and the most fruitful congress which has yet been held, and I assure you of my interest and service to that end.

With expressions of appreciation for the compliment conferred in extending the invitation to become president of the congress,

Very respectfully,

THEODORE ROOSEVELT.

Dr. Edward L. Trudeau has been elected honorary president of

the congress, and Vice-president Fairbanks, Speaker Cannon and the governors of the states have been asked to serve as vice-presidents. The list of vice-presidents is not complete, but those who have agreed to serve in that capacity include Vice-president Fairbanks, Speaker Cannon, Governors Gillet of California, Buchtel of Colorado, Woodruff of Connecticut, Deneen of Illinois, Hanly of Indiana, Cummins of Iowa, Hoch of Kansas, Willson of Kentucky, Cobb of Maine, Crothers of Maryland, Warner of Michigan, Johnson of Minnesota, Noel of Mississippi, Folk of Missouri, Floyd of New Hampshire, Fort of New Jersey, Hughes of New York, Glenn of North Carolina, Burke of North Dakota, Harris of Ohio, Chamberlain of Oregon, Stuart of Pennsylvania, Ansel of South Carolina, Patterson of Tennessee, Cutler of Utah, Proctor of Vermont, Swanson of Virginia, and Dawson of West Virginia.

The German committee of arrangements for the congress has a membership of over 150. The list forwarded to the secretary-general by Doctor Nietner includes some of the highest dignitaries of the empire. Doctor von Bethmann-Hollweg, the president of the committee, is the imperial secretary of the interior and the vice-president of the Prussian ministry of state. The vice-presidents are Count von Lerchenfeld, royal Bavarian state counsellor and ambassador plenipotentiary, and Baron von Knessebeck, royal master of ceremonies and chamberlain to her majesty the empress; and the treasurer is Ernst von Mendelssohn Bartholdy, a member of the Prussian diet. Another distinguished member of the committee is Victor, prince of Hohenlohe and Corvey and grand duke of Ratibor. Doctors von Leyden, B. Frankel, Orth, Baginsky and Nietner constitute the central commission, and others named on the list include Dr. Robert Koch, Dr. Emil von Behring, Dr. A. Frankel, Dr. Richard Neisser, Dr. Lydia Rabinowitsch-Kempner, Dr. G. Pannwitz, Doctor Schottelius, Doctor Abb, secretary of the civil cabinet of the emperor at Berlin; Doctor Bumm, president of the imperial board of health; and Doctor Schjerning, general chief of the army sanitary corps and of the medical division of the war department.

A committee of sixty-four members has been appointed to arrange for the part Belgium will take in the congress and in the exhibition to be held in connection with it. M. Beco, the governor of Brabant, is honorary president, and Doctor Dewez, president of the Belgian Anti-tuberculosis League, is president of this committee. Other members of the committee are M. Velghe, director-general of the ministry of agriculture; Doctor Van Ryn, secretary-

general of the Belgian Anti-tuberculosis League; Doctor Bordet, director of the Pasteur Institute at Brussels; M. R. Waracqué, Doctor Cousot, and Doctor Descamps, all of whom are members of the chamber of representatives; Doctor Devaux, inspector-general of the department of health and hygiene; Doctor Courtoy, president of provincial medical commission of Namur; Doctor Dethier, director of the Anti-tuberculosis Dispensary at Namur; and Doctor Wouters, director of the dispensary at Louvain.

Tuberculosis in the Day-school Teacher.

It has come to the notice of the State Board of Health on several occasions during the past year that teachers in certain public schools were suffering from pulmonary tuberculosis. In several instances the facts were obtained that the teacher in question had come from another state to the more healthful climate of western Kansas, by reason of the fact that he was tubercular, and had sought the position of teacher in the public schools as a means of subsistence. These matters were laid before the Board at its annual meeting by the secretary, whereupon the following resolution was introduced and unanimously adopted:

WHEREAS, Tuberculosis is now generally recognized as a communicable disease; and

WHEREAS, It has come to our notice that teachers suffering from tuberculosis have been employed in the public and private schools of this state: therefore, be it

Resolved, That school boards, boards of education, superintendents of institutions, and others who engage teachers as such, are requested to make careful inquiry as to the health of applicants, especially whether such applicant is suffering from tuberculosis.

This resolution was submitted to Mr. Fairchild, state superintendent of public instruction, whereupon a letter of instruction was issued by him to county superintendents calling their attention to a literal compliance with the Board's resolution. Health officers and others who have information of the violation of this resolution should report the case to this department at once.

The state pharmacy law requires that any preparation containing more than two grains of opium to the ounce may be sold only in the same way as other poisons are sold—by registration in the poison book. Several prominent patent medicines come under this provision of the law

—

To the Stork.

Here's to the stork,
A most valuable bird,
That inhabits the residence districts.
He does n't sing tunes
Nor yield any plumes
But he helps out [*when recorded*] the vital statistics.
—*Portland Oregonian.*

Here's to the stork,
A benevolent bird,
Who would bless every home in each district,
But he's sad and forlorn
From evening till morn
If unable to help with vital statistics.
—*Iowa Health Bulletin.*

Here's to the stork,
Good industrious bird,
Who increases birth-rates for all districts,
But works without avail
When bad physicians fail
To register all these vital statistics.
—*California Health Bulletin.*

Here's to the stork,
Of the days of yore,
That did live in the residence districts;
But the present-day stork
Thinks that all a bore,
And has no interest in vital statistics.
—*Indiana Health Bulletin.*

Here's to the stork,
Anti-race-suicide bird,
Who thrice blest a home in this district;
He's now merry and gay
From morn to close of day,
For triplets help out vital statistics.
—*Kansas Health Bulletin.*

Here's to the stork
For he works overtime
To help out the wise statistician,
But his score is cut down
Both in country and town
Through the fault of the careless physician.
—*Illinois Health Bulletin.*

Here's to the stork,
A most conscientious bird,
Who is partial to rural districts,
He may work day and night,
But still is in a plight
To get credit for it in statistics.
—*Ohio Health Bulletin.*

Here's to the stork,
Our National bird (?)
Who rules in the realm of the mystic.
When he appears before you,
Don't call out "Skidoo!"
He adds another vital statistic.
—*Michigan Health Bulletin.*

Fresh Air.

A few teachers know the importance of flooding the school-room with fresh air at recess time, but they are very few. Occasionally a teacher is found who fully understands that human beings must have air in order to be healthy and well, and in order to have clear, receptive minds. These teachers, when they notice their pupils are dull, inattentive and listless, will call the school to order, open the windows, flood the room with fresh air, put the children through slight gymnastic exercises and then go on with their teaching. In such rooms greater progress is noticeable. In the efforts of a few public-spirited people to secure healthful surroundings for school children, much opposition is met. Generally, the opposition proceeds from men who have no children to educate, or whose children have come through the perils of the unsanitary schoolhouse, and they argue, therefore, no perils exist. In their ignorance and conceit, they do not stop to consider that while they or their children have escaped, that scores of others have been injured, even made invalids, and not a few destroyed. The only hope of securing sanitary schoolhouses lies in educating the school children in regard to the matter, so that when they grow up and become the ruling factors in their community, they will naturally build schoolhouses which conform to the laws of health.—*Wisconsin Bulletin*.

Origin of Ox-tail Soup.

It is usually interesting to know how some of our favorite dishes first began to be eaten. Grim necessity usually has dictated experiments in the eating line. The Omaha Trade Exhibit recently picked up a bit of information regarding the origin of ox-tail soup which may be of interest to our readers.

During the Reign of Terror in Paris in 1793 what was left of the nobility were reduced to the verge of starvation. The abattoirs sent their hides fresh to the tanners without removing the tails, which, on the cleaning of the hides, were thrown away. A noble beggar, one day, happening to notice a pile of discarded tails, asked for one. He took it to his lodgings and made the first dish of ox-tail soup. He told his friends and soon the demand for ox-tails was so great that a price was put upon them.

Have you asked your dairyman to test his cows for tuberculosis?

FORGET IT.

If critics hunt for flaws in you,
Or friends prove false when you are true,
Forget it.

Don't work yourself into a heat,
Because some others have cold feet,
And criticise and storm—be sweet.
Forget it.

Let others tell what may not stand
The calmer thought with truth at hand.
Forget it.

You'll live the longer if you let
The "Nose-arounds" just stew and fret,
Until the cold chills on them set.
Forget it.

For some are born with noses long,
For scenting scandal, right or wrong.
Forget it.

Be kind, be sweet, nor bend the ear
To scandal, and you will not hear
The parrot-talk that starts the tear.
Forget it.

Turn not the leaf from yesterday,
The leaf that's soiled with what "They say."
Forget it.

For like a viper in a cage,
Will Malice, Hate and Envy rage,
While Love turns o'er a clean new page
And forgets it.

Spring Hill, Kan.

—Ed. Blair.

BULLETIN

OF THE

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MEMBERS OF THE STATE BOARD OF HEALTH.

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|-----------------------------------------------------|--------------------------------------------|
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No. 9.

SEPTEMBER, 1908.

VOL. IV.

The fly is the disseminator of the 3 D's—Dirt, Diarrhea and Disease, which often result in the 3 T's—Typhoid, Tuberculosis and Toxines (Ptomaines), and which should teach us to cultivate the 3 C's—Care, Caution and Cleanliness.

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CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Meade..... | 0 | 0 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Miami..... | | | | | | | | | | | | |
| †Mitchell..... | | | | | | | | | | | | |
| Montgomery..... | 8 | 8 | 4 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| *Morris..... | | | | | | | | | | | | |
| †Morton..... | | | | | | | | | | | | |
| Nemaha..... | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| *Neosho..... | | | | | | | | | | | | |
| Ness..... | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osborne..... | 5 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 2 | 1 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Phillips..... | | | | | | | | | | | | |
| Pottawatomie..... | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Rawlins..... | | | | | | | | | | | | |
| Reno..... | 2 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Rice..... | | | | | | | | | | | | |
| Riley..... | 5 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Rooks..... | 1 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell..... | 0 | 0 | 1 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Scott..... | | | | | | | | | | | | |
| †Sedgwick..... | | | | | | | | | | | | |
| Seward..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shawnee..... | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Smith..... | | | | | | | | | | | | |
| Stafford..... | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Stanton..... | | | | | | | | | | | | |
| †Stevens..... | | | | | | | | | | | | |
| Sumner..... | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego..... | 0 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Wabaunsee..... | | | | | | | | | | | | |
| *Wallace..... | | | | | | | | | | | | |
| Washington..... | 0 | 0 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| Wilson..... | 8 | 1 | 5 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 0 |
| †Woodson..... | | | | | | | | | | | | |
| Wyandotte..... | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| Coffeyville..... | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City..... | 15 | 14 | 22 | 5 | 4 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| Leavenworth..... | 1 | 1 | 0 | 0 | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Parsons..... | 7 | 4 | 3 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Pittsburg..... | | | | | | | | | | | | |
| Topeka..... | 4 | 4 | 5 | 3 | 6 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| State Institutions. | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

Investigation has shown that the common house-fly is responsible for a large number of the cases of typhoid fever in Kansas. Again we remark—Swat the Fly!

FOOD ANALYSIS No. XVIII.

By J. T. WILLARD, Analyst for the Board.

MANHATTAN, KAN., September 16, 1908.

The following reports are submitted upon articles that have been examined since the 1st of May:

VINEGAR.

A number of samples of vinegar were submitted last spring for examination with reference to their strength and other characteristics. They were all examined on the following points: Specific gravity, total solids or extract, ash, alkalinity of ash, total acidity, free mineral acid, malic acid and caramel. The following table presents in compact form certain of the results obtained. The samples are described and commented upon to a certain extent later:

| Inspection No. | Specific gravity. | Per cent. total solids..... | Per cent. ash.... | Alkalinity of ash from 100 cc. in terms of cc. N 10 hydrochloric acid.... | Per cent. total acidity..... | Mineral acids... | Malic acid..... | Class..... |
|----------------|-------------------|-----------------------------|-------------------|---------------------------------------------------------------------------|------------------------------|------------------|-----------------|------------|
| 7093 | 1.016 | 2.45 | 0.52 | 32.8 | 6.25 | None. | Strong..... | Passed. |
| 7094 | 1.017 | 2.35 | 0.32 | 33.3 | 6.06 | " | Present..... | " |
| 7095 | 1.027 | 3.49 | 0.10 | 4.5 | 6.02 | " | " | " |
| 7097 | 1.014 | 2.52 | 0.27 | 38.0 | 3.63 | " | Strong..... | Illegal. |
| 7099 | 1.018 | 3.22 | 0.25 | 40.3 | 7.26 | " | " | Passed. |
| 7100 | 1.015 | 2.20 | 0.20 | 38.3 | 5.18 | " | " | " |
| 7102 | 1.014 | 1.85 | 0.32 | 24.0 | 5.04 | " | " | " |
| 7108 | 1.008 | 0.08 | trace. | ..... | 4.11 | " | None..... | " |
| 7120 | 1.012 | 2.23 | 0.62 | 33.4 | 5.04 | " | Strong..... | Passed. |
| 7121 | 1.012 | 2.06 | 0.33 | 31.0 | 4.31 | " | Present..... | " |
| 7122 | 1.013 | 1.96 | 0.33 | 36.0 | 5.21 | " | Strong..... | " |
| 7156 | 1.006 | 0.45 | 0.04 | 1.6 | 5.23 | " | None..... | ..... |

No. 7093; serial No. 2174. Cider Vinegar. Manufactured by Benton Fruit Products Company, Benton, Mich. Sold by J. W. Withers, Fort Scott, Kan. All tests and indications agreed with the properties of cider vinegar.

No. 7094; serial No. 2175. Cider Vinegar. Manufactured by Lincoln Hazeltines, Springfield, Mo. Sold by H. B. Terry, Fort Scott, Kan. Apparently a pure cider vinegar.

No. 7095; serial No. 2176. Glucose Vinegar. Manufactured by the Emrich Vinegar and Pickle Company, Kansas City, Mo. Sold by Ward Alsip, Fort Scott, Kan. This vinegar possessed color, but this was apparently not due to the addition of caramel. Its properties were those of a vinegar made from brown glucose.

No. 7097; serial No. 2177. Cider Vinegar. Manufactured by W. C. Rose, Fort Scott, Kan. Sold at the mill by the manufacturer. It is a pure cider vinegar, but below the legal strength.

No. 7099; serial No. 2178. "Old Glory" Pure Cider Vinegar. Manufactured by the Emrich Vinegar and Pickle Company, Kansas City, Mo. Sold by Huser & Son, Pittsburg, Kan. The results indicate a pure cider vinegar.

No. 7100; serial No. 2179. "Old Glory" Apple Vinegar. Manufactured by the Emrich Vinegar and Pickle Company, Kansas City. Sold by W. A. Kent, Pittsburg, Kan. Results indicate that it is apple vinegar.

No. 7102; serial No. 2216. Pure Cider Vinegar. Manufactured by O. L. Gregory Vinegar Company, St. Louis. Sold by W. H. Payton, Pittsburg, Kan. Said to be double refined. The alkalinity of the ash is low, but not lower than has been observed with cider vinegar of known purity. The other characteristics agree with pure cider vinegar.

No. 7103; serial No. 2217. Table Compound Vinegar. "Regal" Brand Bottled Vinegar. Marked "Burnt sugar color." Sold by G. C. Pruett, Pittsburg, Kan. Jobber, Joplin Candy and Specialty Company, Joplin, Mo. The vinegar was found to be colored with caramel, and gives no indication of containing cider vinegar. It is probably a colored distilled vinegar. Misbranded.

No. 7120; serial No. 2218. Cider Vinegar. Manufactured by H. W. Struble, Girard, Kan. Sold by T. F. Grigg, Girard, Kan. Apparently a pure cider vinegar.

No. 7121; serial No. 2219. Cider Vinegar. Manufactured by O. J. Pettijohn, Girard, Kan. Sold by J. B. Frazier, Girard, Kan. All of the results agree with pure cider vinegar.

No. 7122; serial No. 2261. Cider Vinegar. Manufactured by the Monarch Vinegar Works, Kansas City, Mo. Sold by C. Strickler, Girard, Kan. Apparently pure cider vinegar.

No. 7156; serial No. 2262. Pure Sugar Vinegar. Manufactured by the Interstate Grocery Company, Joplin, Mo. Sold by J. A. Dent, Baxter, Kan. This vinegar seems to be colored in part by caramel, and is probably a glucose vinegar.

Study of the following table shows that many of the milk-dealers supplying Kansas City are still manipulating their milk so as to bring their product as near to the legal standard of 3.25 per cent. of fat as they dare try, and that some of them, intentionally or in-

MILK AND CREAM.

| Insp. No. | Serial No. | DEALER. | Place. | Fat. | Class. |
|-----------|------------|------------------------------------|------------------------|------|----------|
| 6150 | 2315 | Robison & Son..... | Kansas City..... | 3.75 | Passed. |
| 6152 | 2317 | F. G. Russell..... | Allen Creek..... | 3.60 | .. |
| 6153 | 2318 | Chinery & Booth..... | Kansas City..... | 4.30 | .. |
| 6154 | 2319 | De Coursey Pure Milk Company..... | .. | 3.45 | .. |
| 6155 | 2320 | J. W. Thomas..... | .. | 3.55 | .. |
| 6156 | 2321 | Robison & Son..... | .. | 3.35 | .. |
| 6157 | 2322 | Robison & Son..... | .. | 3.55 | .. |
| 6159 | 2323 | Meyer's Sanitary Milk Company..... | .. | 3.90 | .. |
| 6160 | 2326 | R. Curran..... | .. | 6.35 | .. |
| 6161 | 2327 | G. W. Orr..... | .. | 3.60 | .. |
| 6162 | 2328 | D. Hankins..... | .. | 4.15 | .. |
| 6163 | 2329 | John Gunther..... | .. | 3.25 | .. |
| 6164 | 2330 | A. Waldner..... | .. | 4.05 | .. |
| 6166 | 2332 | B. B. Ballard..... | .. | 3.30 | .. |
| 6167 | 2333 | J. F. Kerr..... | .. | 3.05 | Illegal. |
| 6168 | 2334 | John Scalpens..... | .. | 2.15 | .. |
| 6169 | 2335 | H. L. Armentrout..... | .. | 2.55 | .. |
| 6170 | 2336 | Chinery & Booth..... | .. | 3.80 | Passed. |
| 6171 | 2337 | F. C. Rohrbach..... | .. | 2.85 | Illegal. |
| 6172 | 2338 | F. Henning..... | .. | 3.35 | Passed. |
| 6173 | 2339 | Sam McDowell..... | .. | 3.25 | .. |
| 6174 | 2340 | Jenkins & Son..... | Bethel..... | 3.25 | .. |
| 6175 | 2341 | Sam Marrow..... | Wilborn..... | 3.70 | .. |
| 6176 | 2342 | J. R. Zimmerman..... | Kansas City..... | 3.60 | .. |
| 6177 | 2343 | Geo. Fredrick..... | .. | 5.20 | .. |
| 6178 | 2344 | J. W. Henry..... | .. | 3.40 | .. |
| 6179 | 2345 | I. Kosovitz..... | .. | 3.45 | .. |
| 6180 | 2346 | J. Garner..... | .. | 4.35 | .. |
| 6181 | 2347 | F. Clausen..... | Merriam..... | 3.05 | Illegal. |
| 6182 | 2348 | K. Clausen..... | .. | 3.35 | Passed. |
| 6183 | 2349 | Wm. Hampton..... | Rosedale..... | 4.75 | .. |
| 6184 | 2350 | Fisher Bros..... | Merriam..... | 4.85 | .. |
| 6185 | 2351 | Johnson Bros..... | Argentine..... | 3.25 | .. |
| 6186 | 2352 | P. Muir..... | Shawnee..... | 4.20 | .. |
| 6187 | 2353 | Roy Peterie..... | Rosedale..... | 3.50 | .. |
| 6188 | 2354 | H. Sice..... | Argentine..... | 3.70 | .. |
| 6189 | 2355 | O. Olson..... | Rosedale..... | 3.35 | .. |
| 6190 | 2356 | J. H. McMahon & Son..... | Argentine..... | 5.75 | .. |
| 6191 | 2357 | J. H. McCulley..... | .. | 3.25 | .. |
| 6192 | 2358 | Interstate Dairy..... | .. | 3.70 | .. |
| 6193 | 2359 | John Godfrey..... | Kansas City..... | 3.45 | .. |
| 6194 | 2360 | D. Kanter..... | .. | 2.80 | Illegal. |
| 6195 | 2361 | Speaker & Lilliet..... | .. | 5.35 | Passed. |
| 6196 | 2362 | W. Fleming..... | .. | 4.40 | .. |
| 6197 | 2363 | H. H. Sowder..... | .. | 3.10 | .. |
| 6198 | 2368 | F. A. Cuduff..... | .. | 2.95 | Illegal. |
| 6199 | 2369 | Lou Ely..... | Rosedale..... | 3.25 | Passed. |
| 6201 | 2371 | R. Nelson..... | Graystone Heights..... | 3.45 | .. |
| 6202 | 2372 | A. Jones..... | Kansas City..... | 3.95 | .. |
| 1330 | 2374 | S. L. Stoner..... | Wellsville..... | 3.75 | .. |
| 1333 | 2429* | C. W. Bishop Cafe..... | Kansas City..... | 2.42 | Illegal. |

* Said to have been purchased of Chinery & Booth, Kansas City, Kan.

advertently, have gotten it in some cases notably below that figure. The fat of the average milk of a mixed herd contains about 3.8 per cent. of fat, and samples falling much below that may be taken as showing manipulation of some kind, unless it is the product of a single cow or of a herd consisting of one of the breeds that regularly yield a milk with less fat than 3.8 per cent. The minimum of 3.25 per cent. will provide for the product of almost all healthy cows. It is ridiculous for a milk-dealer or others to maintain that milk containing 2 or 2.5 per cent. of fat is the normal product obtained by the complete milking of one or more healthy cows. The practice of partially skimming milk or of mixing skimmed milk

with whole milk and selling the product as whole milk is one that should be discountenanced by legitimate producers, opposed by intelligent consumers and suppressed by officers of the law.

ICE-CREAM.

| Insp. No. | Serial No. | DEALER. | Place. | Fat. | Class. |
|-----------|------------|--------------------------------------------------|-------------------|-------|----------|
| 1308 | 2333 | E. R. Wheeler..... | Galena..... | 18.10 | Passed. |
| 1304 | 2294 | C. O. Teeter..... | "..... | 7.37 | Illegal. |
| 1305 | 2335 | T. M. Bailey..... | "..... | 18.60 | Passed. |
| 6113 | 2300 | Sam Freedman, manufacturer..... | Kansas City..... | 10.10 | Illegal. |
| 6114 | 2301 | Willson Greer..... | "..... | 13.50 | " |
| 6115 | 2302 | De Coursey Pure Milk Company..... | "..... | 14.30 | Passed. |
| 6116 | 2303 | Meyer's Sanitary Milk Company..... | "..... | 14.00 | " |
| 1307 | 2307 | F. W. Butler..... | Yates Center..... | 15.45 | " |
| 1308 | 2308 | A. Krueger..... | "..... | 2.20 | Illegal. |
| 1309 | 2309 | M. S. Bacon..... | "..... | 11.65 | " |
| 1310 | 2310 | M. S. Bacon..... | "..... | 17.00 | Passed. |
| 7207 | 2364 | Magruder Bros..... | Parsons..... | 11.50 | Illegal. |
| 7208 | 2365 | Magruder Bros..... | "..... | 10.30 | " |
| 7209 | 2366 | Magruder Bros..... | "..... | 12.50 | " |
| 7210 | 2367 | W. C. McKee..... | "..... | 14.60 | Passed. |
| 6300 | 2370 | S. J. Conner..... | Rosedale..... | 12.00 | Illegal. |
| 1329 | 2373 | W. A. Nichols..... | Wellsville..... | 15.10 | Passed. |
| 1332 | 2375 | J. B. Todd..... | Gardner..... | 14.95 | " |
| 7218 | 2377 | Edward Cero..... | Wichita..... | 8.50 | Illegal. |
| 7219 | 2378 | Arctic Ice and Ice-cream Company..... | "..... | 13.05 | Passed. |
| 7220 | 2379 | Arctic Ice and Ice-cream Company..... | "..... | 17.50 | " |
| 7221 | 2380 | Steffen & Bretsch Ice and Ice-cream Company..... | "..... | 14.00 | " |
| 7223 | 2382 | Steffen & Bretsch Ice and Ice-cream Company..... | "..... | 8.15 | Illegal. |
| 7224 | 2383 | Wichita Creamery Company..... | "..... | 13.35 | " |
| 7225 | 2384 | E. B. Messerve..... | "..... | 12.75 | " |
| 7226 | 2385 | Stivis Nolos..... | "..... | 3.10 | " |
| 7227 | 2386 | Pete Cero..... | "..... | 8.20 | " |
| 7228 | 2387 | F. Besant..... | "..... | 12.45 | " |
| 7229 | 2388 | H. D. Higginson..... | "..... | 13.00 | " |
| 7234 | 2407 | J. E. Galloup..... | Anthony..... | 12.55 | Illegal. |
| 6208 | 2408 | Trent & Co..... | Downs..... | 9.50 | " |
| 6204 | 2409 | Geo. M. Wilson..... | "..... | 9.45 | " |
| 6205 | 2410 | H. E. Wade..... | "..... | 13.95 | Passed. |
| 6206 | 2411 | E. Schneider..... | "..... | 4.50 | Illegal. |

The following notes are appended concerning some of the above samples:

Nos. 1304 and 1305. Taken from unopened five-gallon cans.

No. 1307. Taken from an unopened five-gallon packer.

No. 1308. Made the morning of sampling and a sample was taken from a five-gallon packer from which about one gallon had been used.

No. 1309. Taken from an unopened five-gallon packer.

No. 1310. Caramel nut ice-cream from an unopened three-gallon packer.

No. 7210. Manufactured by Parsons Creamery Company, Parsons.

No. 6200. Manufactured by the Western Creamery Company, Kansas City, Mo.

No. 1329. Manufactured by the Ottawa Condensing Company, Ottawa, Kan.

No. 7219. A sample of strawberry ice-cream, in which the legal standard for fat is 12 per cent.

No. 7221. Sample taken from a packer in the factory.

No. 7223. This product was designated by the manufacturers as "Sugar, sweet cream, evaporated milk, gelatin, and flavoring." This appears to be an attempt to evade the law by a technicality by not using the name ice-cream. It seems clear, however, that no one would retail the substance by such a cumbersome designation as this, and that to the consumer it would be delivered as ice-cream. While the sale of frozen preparations with less than the amount of fat required for ice-cream should not be forbidden, manufacturers should designate such preparations by some suitable name that is not misleading, in order that no deception be practiced upon the consumer. The problem of controlling such sales so as to protect the consumer without unnecessarily hampering legitimate business is a difficult one. It would seem that establishments retailing such preparations should show advertising signs in which the name of the substance on sale is prominently displayed. Where this is not done it should be a fair inference that the article on sale is represented to be ice-cream.

No. 7226. This article is by the manufacturers labeled "Messerve's Ice Cream Compound. Composed of pure milk, cream, sugar, and gelatin. Guaranteed under the Food and Drugs Law, February 14, 1907. Serial No. 26." Some of the labels are stamped "Artificial flavoring and artificial color." The remarks made in the preceding paragraph apply with almost equal force to this. The name "Ice-cream compound" is not likely to be used in its entirety by the retailer. For substances that do not conform to the standards for ice-cream it would seem that the interests of consumers can be conserved only by interdicting the use of the term "ice-cream" in connection with the name.

No. 7229. A strawberry ice-cream.

FURTHER INVESTIGATION CONCERNING TESTING FOR SULFITES IN FOODS.

In our last report, in connection with the subject of canned salmon, the difficulties encountered in passing upon foodstuffs with reference to the presence or absence of sulfites was discussed, and also a few samples of canned corn were reported upon. Some of the samples of corn when tested for sulfites gave no indication of their use when the gas evolved by the ordinary process was passed through two wash flasks containing copper sulfate. Other samples of corn, notwithstanding this precaution, gave results in-

dicating sulfites, the test being performed several times. The Lange Canning Company insist that they are no longer using sulfites with their corn, and that the lot represented by No. 5190, serial No. 2129, was new pack, upon which sulfites had not been used, notwithstanding the fact that it was labeled "Riverside Cream Corn," while their new labels read "Riverside Sugar Corn."

To throw further light upon the matter experiments were instituted this summer upon corn fresh from the cob, and the following are some of the results:

No. 1; serial No. 2397. The green sweet corn was cut from the cob and placed in an 850 cc. Erlenmeyer flask, 100 cc. of water and 10 cc. of 20 per cent. phosphoric acid were added, and the mixture was then distilled on a glycerin bath at 120° C. The distillate was oxidized by bromin water and tested for sulfuric acid with barium chlorid in the usual way. A good precipitate was obtained.

No. 2; serial No. 2398. In this case the green sweet corn was cut from the cob and cooked until tender, and was then treated as in No. 1. A slightly heavier precipitate of barium sulfate was obtained.

No. 3; serial No. 2399. In this case the green sweet corn was cut and thoroughly scraped from the cob and cooked until tender. It was then thickened with starch and a small amount of common salt added, the thought being to obtain a sample resembling the commercial canned corn. The product was tested as in No. 1 and yielded a good precipitate of barium sulfate about the same as with No. 2.

Three samples similar to the preceding were then run as described in No. 1, except that the steam and other products of distillation were run through two wash flasks of copper sulfate solution before condensing. In each case a very light precipitate of barium sulfate was obtained.

No. 7; serial No. 2416. This was a sample of very young green sweet corn, treated as in No. 1. A good precipitate was obtained with barium chlorid.

No. 8; serial No. 2417. A sample of old green sweet corn, that is, overmatured, treated as was No. 1, gave a precipitate of barium sulfate, but not as much as did No. 7.

No. 9; serial No. 2418. In this case the sweet corn was dried on the ear previous to making the test, and was then treated as was No. 1. A light precipitate of barium sulfate was obtained.

These results show that some compound of sulfur is liberated from the fresh corn and that it is not completely absorbed by the

copper sulfate, at least under the conditions of our trial, and is finally precipitated by barium chlorid. Although some samples of canned corn under treatment exactly similar to that described do not give a distillate yielding sulfuric acid on oxidation, in view of these results obtained with fresh corn it is best to concede the possibility, perhaps even the probability, that the sulfur obtained from Nos. 5198 and 7127, Riverside Cream Corn, packed by the Lange Canning Company, Eau Claire, Wis., came from the corn itself and not from the added sulfites.

To test the matter of evolution of sulfur from vegetable substances still further, fresh sweet potatoes, tomatoes, cucumbers, cabbage, string beans, beets, celery and onions, were each separately cooked and tested in the usual manner of testing for sulfites. Light precipitates were obtained with barium chlorid in all cases excepting with the cucumbers and the beets; which gave no reaction.

BEVERAGES.

No. 2301; serial No. 2405. Manufactured by the Rochester Brewing Company, Kansas City, Mo. Jobber, W. O. Mullens, Junction City, Kan. Seller, G. B. McCumber, Junction City, Kan. A pint bottle of "Adam's Special," claimed to contain less than one-half of one per cent. of alcohol, "Guaranteed under the Food and Drugs Act, serial No. 5550." The liquor was of a light-amber color, with the odor and taste of malt drinks. It contained 0.63 per cent. of alcohol.

No. 2302; serial No. 2406. Manufactured by the Rochester Brewing Company, Kansas City, Mo. Sold by the Miller Drug Company, Junction City, Kan. Labeled "Recupotone, a mild beer, guaranteed under the food laws of Kansas to contain not more than 1.90 per cent. of alcohol." It was of a light-amber color, with the taste and odor of a mild beer. Percentage of alcohol, 1.86.

No. 12158; serial No. 2433. "Jersey Cream." Sold by E. May Johnson, Manhattan Candy Kitchen, Manhattan, Kan. This article is a soda-water sirup of a dark-red color, very sweet, and with the odor and taste of plums. It was found to be free from fat, hence contains no cream. It contains saccharin. A portion was evaporated, incinerated and tested for lead and copper, but these were not found. Illegal, because of misbranding and the presence of saccharin.

No. 2305; serial No. 2430. "Ironbrew." Bottled and retailed by the Star Bottling Company, Salina, Kan. The label in full reads: "Ironbrew (registered trade-mark). A non-alcoholic life renewer. From the recipe of a celebrated Carlsbad physician.

Ironbrew is a combination of vegetable tonics and delicious aromatics, enriching and strengthening the blood, muscles, brain; regulating the stomachic and nervous system; relieving headache, nausea, dyspepsia, sleeplessness, general debility, and on account of its life and health-renewing properties the most valuable tonic and delicious beverage ever offered to the public. Manufactured by Maas & Waldstein, 107 Murray street, New York, and bottled and dispensed by all first-class bottlers and druggists all over the world. Bottled by the Star Bottling Company, Salina, Kan." The label also carries a device consisting of an arm and hammer. The liquid was of a dark-brown color, with the odor and taste of vanilla, and was carbonated. It contained saccharin and 0.13 per cent. of alcohol, the latter probably carried by the flavoring material. One hundred cubic centimeters evaporated to dryness and ashed, when tested for iron, showed barely a trace of that metal, entirely outside the limits of estimation and very likely naturally present in the water used in the preparation of the drink. The drink is misbranded, in that it conveys to the purchaser the idea that the liquor contains iron. It is also illegal because of its content of saccharin.

No. 5221; serial No. 2304. Baker's Chocolate. Manufactured by Walter Baker & Co., Dorchester, Mass. Sold by the Spot Cash Grocery Company, Manhattan, Kan. Percentage of ash, 2.88. Passed as to mineral adulterants.

No. 5222; serial No. 2305. Baker's Chocolate. Manufactured by W. H. Baker, Winchester, Va. "U. S. serial No. 5257. Guaranteed under the Food and Drug Act, July 30, 1906." Sold by the Spot Cash Grocery Company, Manhattan, Kan. Percentage of ash, 2.31. Passed as to mineral adulterants.

Serial No. 2414. Sample of a residue found in the bottom of a can of evaporated milk manufactured by Borden's Condensed Milk Company New York. "Columbia" brand Evaporated Milk. The specimen was of a pale brownish color, rather tough and granular in structure, and had a cheesy odor. It was insoluble in water, soluble in dilute alkalies and with difficulty in dilute sulfuric acid. It gave the Biuret reaction for proteids and the xanthoproteic reaction. It burned to a white ash, which consisted chiefly of calcium phosphate. From this it would appear that some of the casein of the milk had been precipitated in the condensing process with its natural accompaniment of calcium phosphate. It seems that such precipitation is one of the difficulties with which manufacturers of condensed milk have to contend. The presence of such granules

indicates imperfection in the process, but nothing injurious or fraudulent.

MISCELLANEOUS.

No. 5125; serial No. 2306. Buckwheat Flour. Manufactured by the Blodgett Milling Company, Janesville, Wis. Sold by S. C. Smith & Co., Mankato, Kan. The sample had the ordinary appearance and physical properties of buckwheat-flour, a and microscopic examination revealed no starch but that of buckwheat. Passed.

No. 6107; serial No. 2262. Flour. Manufactured by the Oberlin Milling Company, Oberlin, Kan. "Special" brand. Percentage of moisture, 11.67 per cent. Passed as to moisture.

No. 6108; serial No. 2263. Flour. Manufactured by the South-western Milling Company, Kansas City, Kan. "Aristos" brand. Moisture, 11.31 per cent. Passed in respect to moisture.

Serial No. 2390. Queen brand Compound Mustard. Manufactured by Jewell & Sherman Company, Milwaukee, Wis. Sold by Spot Cash Grocery, Manhattan, Kan. This brand was reported under inspection No. 5217 as containing benzoates. The present sample, from a new lot recently received, gave no reaction for salicylates or benzoates. Passed.

No. 7178; serial No. 2265. Cove Oysters. "Pelican Pieces" brand. "Guaranteed under the U. S. Food and Drugs Act, June 30, 1906, serial No. 3330." Packed by Ruge Bros. Canning Company, Apalachicola, Fla. Retailer, C. S. Streeter, Coffeyville, Kan. The contents of the can, about 200 cc., were almost entirely liquid. It contained fifteen small pieces of oysters.

No. 7232; serial No. 2412. Little Valley Red Beets. "Sliced Standard Quality." Manufactured by Niagara Manufacturing and Mercantile Company, Lockport, N. Y. The contents consisted of sliced beets, very light in color. If they were red originally they had bleached out. The can and contents had the appearance of being old stock, the interior of the can being very much corroded. The sample contained no salicylates, benzoates or borates. The tin was present in amount corresponding to 0.01 gram in the entire contents, 1159 grams. Illegal, because of tin.

No. 7069; serial number 2264. Lye Hominy. "American Beauty" brand. Manufactured by the Austin Canning Company, Austin, Ind. Sold by C. F. Propes, Nickerson, Kan. Preservatives were absent. The can was badly corroded on the inside and a determination of the tin showed it to be present in an amount corresponding to 0.048 gram for the contents of the can. Illegal, because of tin.

No. 12157; serial No. 2427. Sardines. "Quoddy" brand, with mustard dressing. Manufactured by the Columbian Manufacturing Company, Lubec, Me. "Packed in mustard sauce]made from select mustard seed, vinegar, cayenne pepper, salt, and colored with turmeric. Guaranteed under the United States food and drug act, June 30, 1906. Serial No. 9413." The sardines had a very uninviting appearance, being soft and more or less mushy. The can was corroded, perhaps from the action of the dressing. No preservatives were found, but tin was present to the extent of 0.0038 gram for the contents, amounting to 3625 grams. Purchased from Long Bros. Wholesale Grocery Company, Kansas City, Mo., by the dealer submitting the sample. Evidence in one can of reprocessing. Illegal.

Decisions Under the Kansas Food and Drugs Law.

The following circular letters embracing decisions of interest to dealers in this state are of sufficient importance to warrant publication in the Bulletin. The subjects of special interest are: Vinegar; cider and cider vinegar made from rotten apples; weights and measures; dirt in potatoes; country fairs; protection of fresh meats in transportation; alumed pickles; undrawn poultry, game and fish; oysters; eggs. The circular letters follow:

KANSAS STATE BOARD OF HEALTH.

Food and Drugs Department.

TOPEKA, September 2, 1908.

CIRCULAR LETTER No. 22.

To the Food and Drug Inspectors: Enclosed find copy of a new ruling on alum food products, applying of course particularly to pickles. The ruling is self-explanatory. Please call the attention of every dealer whom you inspect during the next four months to the provisions of this ruling, and the necessity for the stamp of date on hand, in order that the goods may be legally sold under this ruling.

VINEGAR.

Also pay especial attention to the sale of vinegar to see that all packages are labeled in accordance with the rule, and wherever you find evidence that a sale has been made of cider vinegar which is not as a matter of fact cider vinegar, it is your duty to immediately file complaint against the offending party.

DIRT IN POTATOES.

Keep a close tab on weights and measures, including that of dirt in potatoes. It is held that the presence of dirt in sacked potatoes, to exceed five per cent. of the gross weight of the sack, will be considered an adulteration, and you should file complaints in accordance therewith.

CIDER AND CIDER VINEGAR MADE FROM ROTTEN APPLES.

The apple-cider season is now at hand, and you should make inquiry at each place where you stop as to whether or not there are any cider or vinegar plants in the neighborhood, and, if so, make an inspection of the same. It is held that cider, or vinegar made from cider, that is expressed from rotten apples is a violation of the food and drugs law, as laid down in section 7, sixth under "Foods," and you should file complaint with the proper authorities for such violation.

COUNTRY FAIRS.

Keep a watchful eye on the cider and lemonade stands at the country fairs, as there are usually imitation products sold for the genuine at these places, often containing preservatives or artificial sweeteners, or both.

PROTECTION OF FRESH MEATS IN TRANSPORTATION.

If you should find meat being conveyed from the slaughter-house to the market, or peddled through the streets, uncovered, or open to the flies and dust, you should immediately file complaint against these parties.

Please keep this department advised as to where we may find you, at least every other day.

Very truly yours,

S. J. CRUMBINE, M. D., *Chief Food and Drug Inspector.*

KANSAS STATE BOARD OF HEALTH.*Food and Drugs Department.***ALUMED PICKLES.**

TOPEKA, September 2, 1908.

To Wholesale and Retail Grocers: An estimate, based on information submitted by the wholesale grocers and by the department inspectors, would seem to indicate that there is still remaining in the hands of the jobbers and retail grocers of the state a large amount of pickles and other similar products which contain alum; and, should the ruling prohibiting their further sale after September 1, 1908, be enforced, it would entail a loss of from \$30,000 to \$40,000.

As it has been the policy of this department from the beginning to enforce the food and drugs law with as little financial loss and burdensome regulations as is consistent with a reasonable regard for the interest of the consumers, for whose welfare the law was enacted, the State Board of Health has thought it proper to extend the time for the disposal of such food products as contain alum, on the following conditions:

1. That wholesale dealers be allowed to sell such products as they may have on hand, until January 1, 1909, provided that each package be stamped or tagged with the following legend, "On hand September 1, 1908," and that each label bear a statement of the presence of alum; and provided, that jobbers may not replenish their stock with alumed goods after September 1, 1908.

2. That retail dealers be allowed to sell such products containing alum now on hand or purchased before January 1, 1909, until September 1, 1909, provided that each package now in the hands of the retail trade shall bear a legend or tag, "On hand September 1, 1908," that the label on each pack-

age shall bear a statement of the presence of alum; and provided further, that retailers may not replenish their stock with alumed products after January 1, 1909.

3. That a further extension of time will not be considered.

Very truly yours,

THE KANSAS STATE BOARD OF HEALTH.

By S. J. CRUMBINE, M. D., *Secretary.*

KANSAS STATE BOARD OF HEALTH.

Food and Drugs Department.

TOPEKA, September 18, 1908.

CIRCULAR LETTER No. 23.

UNDRAWN POULTRY, GAME AND FISH.

To the Food and Drug Inspectors: I have for some time been of the opinion that section 7, subdivision sixth under "Foods," could be reasonably applied to the sale of undrawn poultry, game or fish, regardless of the fact of whether or not such undrawn poultry, game or fish had been refrigerated, and in order that there might be no question concerning the matter the attorney-general was requested to give this department an official opinion, which opinion, under date of September 17, is herewith submitted:

"Your letter of the 9th inst. has come duly to hand. You ask as to whether or not section 7, subdivision sixth under "Foods," of chapter 266 of the Session Laws of 1907, said chapter being commonly known as the food and drugs law, would apply to the sale or exposing for sale of undrawn poultry, game and fish.

"The portion of the law referred to (subdivision sixth) reads as follows:

"Sixth, if it consist in whole or in part of a filthy, decomposed, tainted or putrid animal or vegetable substance or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that had died otherwise than by slaughter."

"I am of the opinion that the words 'if it consists in whole or in part of a filthy, decomposed, tainted or putrid animal or vegetable substance,' would include the sale or exposing for sale of undrawn poultry, game and fish. But even granting that there may be a question as to the above words including such undrawn poultry, game and fish, there can be no question but that it would be included in the words 'if it consist . . . of . . . any portion of an animal unfit for food.'

"The jurisdiction of the health department would therefore be the same in regard to the said undrawn poultry, game and fish as it would be in other matters mentioned in said chapter 266, Laws of 1907."

You will therefore hereafter notify all dealers in meat products that all poultry, game and fish must be drawn immediately upon slaughter, and that the sale or exposing for sale at retail of slaughtered poultry, game or fish that is not properly drawn is in violation of the food and drugs law.

The above ruling does not apply to packers or shippers of such products as are sold outside the state and enter into interstate commerce.

Please acknowledge receipt of this letter.

Very truly yours,

S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector.

KANSAS STATE BOARD OF HEALTH.

Food and Drugs Department.

TOPEKA, September 18, 1908.

CIRCULAR LETTER No. 24.

OYSTERS.

To Food and Drug Inspectors: The oyster season will soon be here, and you are requested to be on the lookout for watered or preserved oysters. Oysters that have added water, by the melted ice or otherwise, are held to be adulterated under section 7, subdivisions first and second under "Foods," and the presence of ice in the container with oysters is evidence of such adulteration.

A year and a half has been spent in an educational propaganda in order that dealers may be advised of the provisions of the law, and a reasonable time allotted in which they might adjust their business to new conditions. The department therefore believes that the interests of the consumer may now be best conserved by bringing to speedy account all those who wilfully refuse or neglect to meet the requirements of the law, and you are therefore directed to file complaint with the county attorney against all and every one thus selling adulterated oysters. Your former instructions concerning the sanitary requirements of containers, etc., must be observed.

EGGS.

You are directed also to make careful inquiry into the egg business, and where there is evidence that the law is being violated in the sale of rotten or cold-storage eggs as fresh eggs to immediately make complaint with the county attorney. Your attention is called to "Notice of Judgments of Food and Drugs Act No. 7," issued by the United States Department of Agriculture, under date of July 15, 1908, on misbranding of cold-storage eggs.

Very truly yours, S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector.

Bleached Flour.

The twelfth annual convention of the Association of State and National Food and Dairy Departments, held at the Grand Hotel, Mackinac Island, Mich., August 4 to 7, 1908, was in many respects the most remarkable and memorable meeting this association has ever held. The attendance was large, there being about thirty of the states and the national government represented by over 100 delegates. Moreover, the personnel of the membership was noteworthy of being largely composed of men of high scientific attainments, and of food officials who have won their spurs on the firing-line.

Of the large number of papers presented, the most interesting as well as the most startling was that of Prof. James H. Shephard, of South Dakota, entitled "Nitrous Acid as an Antiseptic." Professor Shephard took the position, which seemed to be proven by

his experiments, that the use of this acid in bleaching flour is a constant menace to public health, and he pronounced it a vicious antiseptic. This paper is of such great scientific value that it is herewith presented in full to the readers of this BULLETIN.

We also take pleasure in announcing that Prof. J. T. Willard, food analyst for the State Board of Health and director of chemistry at the State Agricultural College, has consented to make a series of similar experiments, eliminating as nearly as can be some possible sources of error that have been urged against Professor Shephard's experiments. The results of Professor Willard's findings will be published in a future issue of the BULLETIN. .

Nitrous Acid as an Antiseptic.

By J. H. SHEPHARD, Brookings, S. Dak.

During the past few years enormous quantities of nitrous acid have been employed in preparing the various grades of flours derived from wheat. Various comparisons between treated and untreated flours have been made and widely differing conclusions have been drawn. There is one aspect of the case, however, that has not been thoroughly investigated. Nitrous acid has not been used primarily as an antiseptic. It has been employed as a bleaching agent just the same as sulfur dioxide has been used in bleaching hops and dried fruits. Unfortunately for sulfur dioxide, it lent itself readily to the preservation of fresh meat products. Consequently its antiseptic properties were soon investigated and sulfur dioxide was placed in its proper class along with other powerful chemical preservatives. Thus far nitrous acid has escaped the fate of sulfur dioxide.

Nearly all investigations have been conducted along lines tending to show the effect of nitrous acid on gluten strength, loaf volume, etc., while the antiseptic properties of this chemical have been neglected. Professor Ladd, in his paper, read before this association at Jamestown last year, stated it as his belief that the use of nitrous acid was harmful and deleterious to the flour. Professor Alway, Bulletin 102, Nebraska, concludes that the use of nitrous acid in flour is harmless, basing his belief upon the doctrine of the harmless nature of small quantities of the reagent employed.

But it seemed to the writer that the most satisfactory way of dealing with this problem would be to experiment directly with nitrous acid to determine its effect upon the digestive enzymes themselves. Accordingly during the past year I have planned, and with the aid of my assistant, Mr. Koch, carried out a series of investigations along the lines indicated. I believe the results we have obtained are of sufficient importance to warrant my offering them for the consideration of this association.

At the outset, I wish to state that our work has been very carefully planned and executed and special precautions have been employed to avoid the creeping in of errors.

Our reagents have received special care, and many preliminary trials were made in the different series in order to insure the reliability of the results obtained. The experiments were carried on in glass tubes ranged in series in a special water-bath, allowing easy control of temperature. In

every series blanks were run in order to eliminate any variations caused by slight variations in temperature or in the activity of the enzymes themselves.

The nitrous acid was prepared by dissolving nitrogen peroxid in water. The peroxid was obtained by reduction of nitric acid. The peroxid fumes were dissolved in cold water until the solution assumed a decidedly blue color. This strong acid was preserved in a cool place, and small portions were diluted with water from time to time as needed. The strength of this dilute solution was determined by titration with standard alkali. The amounts of acid used are expressed in every instance as peroxid.

I am well aware that our acid was not pure nitrous acid, owing to the fact that when nitrogen peroxid comes in contact with water varying proportions of nitrous and nitric acids are produced. But this is just exactly what takes place when the peroxid fumes are used in bleaching flour. There is always sufficient moisture in the flour and in the air to change the peroxid into nitrous and nitric acids. Investigators have agreed that the bleaching is due to the peroxid, placing special stress upon the nitrous acid or nitrites formed, disregarding the nitric acid. But we were well content to return the total acidity as nitrous acid, since by so doing we have in every case used less nitrous acid than our figures indicate. Whether the nitric acid is of such small moment or not I do not propose to discuss, but I do believe we have closely approximated the actual conditions prevailing in flouring-mills where the peroxid of nitrogen is used. Owing to the fact that the peroxid is a strong anhydrid it is almost certain that the first change in the peroxid when liberated in the stream of descending flour is to pass into the acid state and then to attack the flour, forming nitrates and nitrites.

The first experiments were concerned with nitrous acid on diastase and starch. In these experiments exactly 200 mg. air-dried corn-starch were weighed into each tube, 25 cc. of water were added, and the starch was then cooked to a homogeneous paste. The water-bath was kept at 55 degrees C. By experiment the proper amount of the particular diastase used was found to digest a blank in about three hours for series 1. In series 2 the diastase was increased so that the blank would digest in about fifteen minutes. The reaction was completed when the contents of any tube failed to respond to the iodine test for starch. Beginning with a certain proportion of peroxid to the starch employed, continually decreasing quantities of that chemical were added to the tubes until a point was reached where the delicacy of the method made no distinction between the tube containing the acid and the blank.

The table at top of page 227 gives the results obtained:

It will be noticed that the third column gives the proportions of peroxid to the solution, thus indicating the dilution of the peroxid. It will be seen that all strengths above 12,500 parts of solution to one of peroxid inhibit digestion. One part of peroxid to 37,500 and on down digests with the blank. At all intermediate points the peroxid seriously interferes with digestion. These experiments show that nitrous acid is a powerful antiseptic, and they were undertaken to throw some light, if possible, upon the action of this chemical upon the flour itself.

It is a well-known fact that wheat-flour carries several important enzymes. For instance, there is an amolytic enzyme which digests the starch, and there

TABLE I. NITROUS ACID ON DIASTASE AND STARCH.

Series 1.

| No. tube. | Parts NO. to starch. | Parts NO. to sol. | Time of digestion. | per cent. retardation. |
|-----------|-------------------------|----------------------|-----------------------|---------------------------|
| 1 | 1:25 | 1:3125 | * | † |
| 2 | 1:50 | 1:6250 | * | † |
| 3 | 1:75 | 1:9375 | * | † |
| 4 | 1:100 | 1:12,500 | * | † |
| 5 | Blank. | Blank. | 2:55 | — |

Series 2.

| | | | | |
|---|--------|----------|------|-----|
| 1 | 1:200 | 1:25,000 | 0:31 | 121 |
| 2 | 1:300 | 1:37,500 | 0:14 | † |
| 3 | 1:400 | 1:50,000 | 0:14 | † |
| 4 | 1:500 | 1:62,500 | 0:14 | † |
| 5 | Blank. | Blank. | 0:14 | † |

* Inhibits digestion.

† Incomplete after 23 hours.

are several proteolytic enzymes that act upon the proteids, and there is now thought to be an erepsin that causes a further degradation of the digestion products of the peptic enzymes. The advocates of nitrous bleaching claim that the acid simply artificially aids in ripening the flour besides bleaching it. But it is a well-known fact that grain cured perfectly dry in the shock, when stacked, undergoes a "sweat" from which the wheat berry emerges much improved for milling. Again, when the stacked grain, after becoming perfectly dry, is thrashed and stored in the bin it undergoes another "sweat" which improves the wheat still further. And finally, when this wheat is now milled, if the flour is not treated with chemicals, it undergoes a third "sweat" in the flour. This cycle constitutes the natural curing and ripening process for the grain and flour. But when the flour is treated with nitrous acid this third and last change does not occur.

What has happened? The advocates of nitrous acid say the ageing of the flour has been hastened artificially. But let us see. What has caused these "sweats" or fermentations in the natural process of ageing? The nature of the action or effects produced on the berry and on the flour points to the agency of enzymes as the cause of these sweatings or ripenings. This being true, the addition of nitrous acid to a flour simply paralyzes the enzymes of the flour, thus completely preventing the third ripening stage. This process renders the flour just that much more difficult to digest. But is this all that the acid does to the flour? It is conceded that it unites with the oil which is bleached. It is also thought to combine with the ash constituents, but this action must be slight, since there is no likelihood of its replacing any acid but carbonic and phosphoric. The sulfates and chlorides would resist its action effectively.

But it is not so certain that the starches and proteids of the flour would escape from damage by the action of the nitric acid and nitrous acid fumes. It is well known that nitric acid breaks up starch and generates oxalic acid, a deadly poison. Again, it is well known that nitrous acid disintegrates the proteids to a certain extent. Thus, Mann, *Chemistry of Proteids*, page 96, concludes that when proteids are treated with nitrous acid the amido compounds remain unaltered or slightly increase, while the total nitrogen is diminished. But the amido compounds have little or no nutritive value. Whence, then, this loss of nitrogen, if not from the digestible and nutritious

albuminoids? Or, in other words, the nutritive albuminoids are lessened in quantity by the use of nitrous acid.

But we must pass on to the digestive enzymes of the human system and see to what extent they tolerate the presence of nitrous acid.

NITROUS ACID ON PTYALIN AND STARCH.

When food is taken into the mouth and masticated it is mixed with saliva which carries a very energetic enzyme, ptyalin, which converts starch into reducing sugars. In the following experiments one gram of starch was cooked to a smooth paste with 40 cc. water in a sugar flask and 5 cc. of tenth normal saliva were added, and the bath was kept at 40 deg. C. The time of digestion was exactly five minutes. At the expiration of that time each flask was filled to the mark with 95 per cent. alcohol, cooled to room temperature, filled to the mark again, filtered and polarized in a 200 mm. tube, using a polariscope giving readings in percentages of cane sugar. These readings were used in obtaining comparisons, since we found them more reliable than the iodine end reaction. While a great number of determinations were made, I shall give one series only:

TABLE II. NITROUS ACID ON PTYALIN AND STARCH.

| No flask. | Parts NO. to starch. | Parts NO. to solution. | Reading of polariscope. | Per cent. retardation. |
|-----------|-------------------------|---------------------------|----------------------------|---------------------------|
| 1 | 1:100 | 1:45,000 | 0:0 | * |
| 2 | 1:150 | 1:67,500 | 0:0 | * |
| 3 | 1:200 | 1:90,000 | 4:0 | 43 |
| 4 | 1:250 | 1:112,500 | 3:6 | 48 |
| 5 | 1:300 | 1:135,000 | 6:0 | 14 |
| 6 | 1:500 | 1:225,000 | 7:0 | .. |
| 7 | 1:1000 | 1:450,000 | 7:0 | .. |
| 8 | Blank. | Blank. | 7:0 | .. |

* Inhibits digestion.

From the foregoing table it will appear that one part of nitrous acid to 67,500 prevents digestion entirely. Between that proportion and 1:135,000 digestion is seriously delayed. No ordinary chemical preservative equals nitrous acid in its antiseptic properties. It might be objected by some that the time of digestion was too short. So I will select two results from another series. Seminormal saliva was used, the acid was 1:25,000 of solution, and the time was 30 minutes. The reading of the polariscope was 0.0, while the accompanying blank gave a reading of 7.2 per cent. The short time of digestion and the dilute solution of saliva were chosen on account of the vigor and rapidity with which ptyalin acts.

NITROUS ACID ON PEPSIN AND EGG ALBUMEN.

When food enters the stomach it comes in contact with the gastric juice, which carries a powerful enzyme, pepsin, which digests the albuminoids. Much work was done with nitrous acid and pepsin. Boiled white of eggs which had been finely divided by rubbing through a forty-mesh sieve was the albumen used, and of which 2 grams was used at each trial. A solution of pepsin in water carrying two-tenths per cent. hydrochloric acid was made, so that 25 cc. of the solution should carry just 4 mg. of pepsin. Of this solution 25 cc. at about 40 deg. C. was used in each trial. I deem this work so important that two series will be given.

TABLE III. NITROUS ACID ON PEPSIN AND EGG ALBUMEN.

| Series 1. | | | | |
|------------------------------------------|-----------------------|------------------------|--------------------|------------------------|
| No. tube. | Parts NO. to albumen. | Parts NO. to solution. | Time of digestion. | Per cent. retardation. |
| 1 | 1:25 | 1:312 | 4 hr. | 336 |
| 2 | 1:50 | 1:625 | 3 hr. 45 min. | 318 |
| 3 | 1:100 | 1:1250 | 2 " 02 " | 121 |
| 4 | 1:200 | 1:2500 | 1 " 20 " | 45 |
| 5 | 1:300 | 1:3750 | broken. | |
| 6 | 1:400 | 1:5000 | 1 hr. 05 min. | 18 |
| 7 | 1:500 | 1:6250 | 1 " 55 " | 66 |
| 8 tube c'k'd. | 1:500 | 1:6250 | 1 " 45 " | 90 |
| 9 acid direct. | 1:500 | 1:6250 | 2 " 05 " | 81 |
| 10 and 11, blanks for Nos. 1 to 6, and 8 | | | 1 " 55 " | |
| 12 and 13, blanks for Nos. 7 and 9 | | | 1 " 09 " | |
| Series 2. | | | | |
| No. tube. | Parts NO. to albumen. | Parts NO. to solution. | Time of digestion. | Per cent. retardation. |
| 1 | 1:1000 | 1:12,500 | 1 hr. 20 min. | 33 |
| 2 | 1:2000 | 1:25,000 | 1 " 17 " | 28 |
| 3 | 1:3000 | 1:37,500 | 1 " 05 " | 8 |
| 4 | 1:6000 | 1:75,000 | 1 " 05 " | 8 |
| 5 | 1:8000 | 1:100,000 | 1 " 15 " | 25 |
| 6 | 1:16000 | 1:200,000 | 1 " | |
| 7 | 1:20000 | 1:250,000 | 1 " | |
| 8 and 9 | Blanks. | Blanks. | 1 " | |

The foregoing table speaks for itself. When an antiseptic can make itself manifest in proportions of 1:100,000 it is certainly not a fit ingredient in any item in the human dietary. Nitrous acid is rivaled only by hydrofluoric acid as an antiseptic. But there are some things that the table does not show. In series 1 the acid gave a marked xanthoproteic reaction with the albumen, which was colored a pronounced yellow. At all times during the digestion fumes of nitrous acid were given off, and in the case of the first numbers in the series practically no digestion took place during the first hour. Not until the nitrous acid was nearly eliminated did the digestion proceed, when it progressed rapidly. So marked was this phenomenon that we corked tube 8 with a tightly fitting rubber stopper, and although there was considerable space above the liquid where the nitrous acid fumes could collect, the digestion was retarded 24 per cent. as compared with 7, an open tube. Tube 9 has a bearing on the union of the acid with albumen. In all the other tubes the acid was added to the tube after all the other ingredients. In this one the acid was added direct to the albumen. After a short time the pepsin solution was poured in and the digestion begun. This tube shows a retardation of 15 per cent. as compared with a regular open tube. From this, one might reasonably expect that nitrous acid added direct to flour would produce more profound disturbance than our results would indicate.

In series 2 it is to be regretted that a series of tubes was not prepared between 100,000 and 200,000, in order to find the limit where the nitrous acid ceases to manifest itself with the method employed. Especially is this true since tube 5, for some unaccountable reason, gave results apparently higher than would be expected from the behavior of the preceding tubes. We will next take up the enzymes of pancreatin.

NITROUS ACID ON PANCREATIN AND STARCH.

After leaving the stomach the food is brought into contact with the pancreatic juice, which carries several active enzymes capable of digesting all

the nutrients of food. These enzymes are called collectively pancreatin. In the experiments made pancreatin was allowed to act on starch.

One gram of starch was placed in a sugar flask and cooked to a smooth paste with 50 cc. of water, 300 mg. of pancreatin were added, and the digestion was carried on for just 30 minutes at a temperature of 40 degrees C. The flasks were then filled with 95 per cent. alcohol to stop the action of the enzymes, cooled, etc., as in the case of ptyalin. The readings of the polariscope were taken for comparisons. I will give one series:

TABLE IV. NITROUS ACID ON PANCREATIN AND STARCH.

| No. flask. | Parts NO ₂ to starch. | Parts NO ₂ to solution. | Reading of polariscope. | Per cent. retardation. |
|------------|----------------------------------|------------------------------------|-------------------------|------------------------|
| 1 | 1:25 | 1:1250 | 0.0 | * |
| 2 | 1:50 | 1:2500 | 0.0 | * |
| 3 | 1:100 | 1:5000 | 0.0 | * |
| 4 | 1:200 | 1:10,000 | 0.0 | * |
| 5 | 1:300 | 1:15,000 | 1.4 | 80 |
| 6 | 1:400 | 1:20,000 | 1.4 | 80 |
| 7 | 1:500 | 1:25,000 | 1.2 | 82 |
| 8 | 1:700 | 1:35,000 | 1.5 | 78 |
| 9 | 1:1500 | 1:75,000 | 1.6 | 76 |
| 10 | 1:1750 | 1:87,500 | 5.0 | 26 |
| 11 | 1:2000 | 1:100,000 | 5.3 | 22 |
| 12 | 1:2500 | 1:125,000 | 5.6 | 17 |
| 13 | 1:3000 | 1:150,000 | 6.8 | .. |
| 14 | 1:5000 | 1:250,000 | 6.8 | .. |
| 15 | Blank. | Blank. | 6.8 | .. |

* Inhibits digestion.

This table confirms the results obtained with the other enzymes and proves that the enzymes of pancreatin are seriously affected by nitrous acid. Any chemical in dilution of 1 part to 100,000 which will retard digestion nearly 25 per cent. should not be permitted in any food product in any quantity whatever. And more especially is this true in the case of flour, which is eaten in one or more forms three times a day and 365 days in the year and all the years of a man's life.

In conclusion, it might be well enough to make some general strictures upon the bleaching process. Alway (*loc. cit.*) has found varying quantities of nitrite in bleached flours averaging 6.3 parts per million. But in many instances the amount reached 10, 20, and in a few cases 30 parts per million. But 10 parts per million is the same as 1 part in 100,000, and 20 parts per million is the same as 1 part in 50,000. An inspection of the tables will show that nitrous acid is capable of doing much mischief at those dilutions. It is true that Alway reported nitrite as sodium nitrite. But it is also true that he made no allowances for nitric acid or nitrates. In our work the latter acid was taken into consideration. Hence the figures are fairly comparable.

One thing further must be said in this connection, and that is, this nitrite is not eliminated in the baking. While it is apparently diminished, there is no certainty that it is actually diminished. It may be so held that the usual analytical process fails to extract it from the bread. I have been able to recover from one-half to one-third of the nitrite in bread that was carried by the flour from which the bread was made. But even if one-half of the nitrite is lost in baking, it does not help the matter much. What reasonable man can say that this constant and insistent dosing of the human system with such a powerful antiseptic as nitrous acid in any quantity what-

ever is a wholesome and hygienic practice? Is it not about time that the American people took steps so effective that bread, the staff of life, may come on the table pure and free from poisonous chemicals?

And then, again, who said that the best bread should be white? What great and eminent physician or hygienist has said that the health-giving and muscle-building qualities of bread are indexed and augmented by an increasing scale of whiteness? Once again, I ask, who has said it? You may depend upon it that even echo will hang her head in shame and refuse to answer. Whiteness is indicative of starch. Starch is cheaper and more plentiful in potatoes. Protein is characterized by a yellowish tint. Bread, the universal food of this nation, is and should be valued for its protein content.

Or is this whiteness in bread simply another phase of the color craze which has swept over the country? If so, and if the "trade" demands white bread, why not be sensible and drop dangerous chemicals and bleach the dough instead by aeration? This is both practicable and feasible. Every housewife may have a bread-mixer if she will that will take natural flour and by forcing air through the dough produce the desired shade or degree of whiteness.

The addition of nitrous acid to flour is not only useless, it is dangerous. Old and young, strong and weak, well and sick, all depend upon bread, and they should have it without any poisonous chemicals. It is not contended here that bleached flour carries nitrous acid in toxic doses, but it is contended that there is sufficient nitrite present to retard digestion and to make it a constant menace to health. Such things beget indigestion and a host of minor ills that tend to sap the vital energies of the consumer and render him an easy prey to prevalent diseases and epidemics.

Nitrous acid is a vicious antiseptic, and any course of reasoning that will permit its use will also permit the use of any or all the other antiseptics known.

Song of the Skirt.

"Sweep—sweep—sweep—
Where the waste of the street lies thick,
Sweep—sweep—sweep—
However our path we pick;
Dust, bacillus, and germ,
Germ, bacillus, and dust,
Till we shudder and turn from the sorry sight
With a gesture of disgust.

"Oh, men with sisters dear!
Oh, men who have well-dressed wives!
It is not alone an expensive mode,
It is one that hazards lives;
For malignant microbes swarm
In the triturated dirt,
And the dress that sweeps it up may prove
A shroud as well as a skirt."

—From *London Truth*, citation by Dr. S. A. Knops.

The Necessity for a Country Slaughter-house and State Meat Inspection.

With Some Suggestions as to Suitable Laws or Regulations Governing the Same.

Read at the annual conference of State and Provincial Boards of Health held in Washington, D. C., September 28, 1908, by DR. S. J. CRUMBINE.

No sane person would undertake to question the wisdom of Congress in the passage of the federal meat-inspection act. If, therefore, it is universally agreed that the inspection of animals slaughtered in packing-houses doing an interstate business was necessary because of the fact that a large number of the animals thus slaughtered were diseased, and because of the necessity for improved sanitary conditions where these meat products were prepared for marketing, there would seem to be no possible argument that could be successfully supported why *all* animals that are slaughtered for food should not be subjected to similar inspection as to the healthiness of the animal and the wholesomeness of the surroundings.

Indeed, there would seem to be additional reasons for country slaughter-house inspection since the passage of the federal meat-inspection law, for many animals that were formerly shipped to the great packing-houses and passed for food products are now condemned, so that shippers are not so willing to take chances in shipping to such places animals known to be diseased, preferring to find a market for such animals among the local butchers, who are not subject to inspection by either state or federal authorities, the consciences of some of whom have long since ceased to act as a sentinel to deter them from imposing upon their fellow men by selling them unwholesome or diseased meat products. Moreover, the average country slaughter-house is, or has been, infinitely more unsanitary than the average large packing establishment. Indeed, they are usually a neighborhood nuisance. One is inclined to wonder at the long-suffering tolerance of the consuming public in permitting many of these pestilential places to remain upon the face of the earth.

. Then, again, the country slaughter-house is usually the focal point for the dissemination of infectious diseases to both man and animal, for it must be remembered that it is the usual custom to feed the offal to hogs which are kept for that purpose. It must, therefore, be self-evident that the feeding of the offal of a tuberculous animal to hogs may infect these hogs with tuberculosis, or

a hog suffering from trichinosis may in like manner infect the rats and the hogs which feed upon the offal of such a diseased animal.

The country slaughter-house is also a favorite place for the neighborhood dogs to eat upon the refuse, and thus tapeworm is conveyed through the medium of the dog to the human family. These conditions are not fanciful, although they may not be scientifically stated; nevertheless it seems to have been abundantly proven that they are facts, and thus are a menace to the health of the people.

From a paper read at Mackinac Island recently by the assistant chief of the Bureau of Animal Industry, Mr. A. M. Farrington, I get the information that a little more than half of the animals slaughtered in this country are under federal supervision. The following table, submitted by Mr. Farrington, is believed to be approximately correct:

ESTIMATED NUMBER OF CATTLE, SHEEP AND SWINE IN THE UNITED STATES, AND NUMBER SLAUGHTERED WITH AND WITHOUT FEDERAL INSPECTION, ETC., DURING 1907.

| ITEM. | Cattle. | Sheep. | Swine. |
|-------------------------------------------------------------------------------------------------------------|------------|------------|------------|
| Number in the United States January 1, 1907, (estimated by Bureau of Statistics, Department of Agriculture) | 72,534,000 | 55,240,000 | 54,794,000 |
| Estimated total number disposed of in 1907* | 14,597,000 | 19,165,400 | 89,725,400 |
| Slaughtered under federal supervision | 7,633,365 | 10,253,070 | 32,585,877 |
| Estimated farm slaughter | 1,800,000 | 1,000,000 | 16,500,000 |
| Exported alive | 401,583 | 121,197 | 23,783 |
| Remainder, slaughtered by butchers without federal inspection | 4,972,052 | 7,798,133 | 10,316,300 |

* Percentages applied: Cattle, 20; sheep, 36; swine, 109.

NOTE.—In addition to the above there were 2,024,387 calves slaughtered under government supervision, and probably fully as many without government inspection.

When it is considered that we have a very heavy export trade in slaughtered animals, which is made up entirely of those slaughtered under the federal meat-inspection law, it must be apparent that over half of the animals slaughtered for food and consumed in this country are those in which there has been no federal inspection. So, if we have hitherto held a fancied sense of security in the belief that all our meat was now good by reason of the passage of the federal meat-inspection law, we may forthwith dispense with that delusion.

With the facts, then, before us, that approximately one-half of the meat consumed in this country daily has not been inspected as to its wholesomeness, and with the agreement on every hand as to the unsanitary condition of the average slaughter-house, what measures might be suggested by which these conditions may be satisfactorily met? At the outset, it might be said that these con-

ditions must be met by state laws or regulations, as the uninspected animals are presumably all consumed in the states in which they are slaughtered, and therefore not subject to interstate or federal regulations. It is at once admitted that the problem presents many difficulties, and there seem to be two ways by which these difficulties may be met, namely, either the employment of a very large number of meat inspectors at a great expense to the state, or the concentration of the business of slaughtering.

Next to the general indifference of the public, the reason why meat inspection has not been more generally adopted is that of the large number and widely scattered slaughter-houses; therefore it would seem as if this objection might be met most successfully by the plan of concentration. Moreover, the experience of European countries has proven that such a plan not only facilitates meat inspection, but has numerous other advantages. Permit me to again quote Mr. Farrington:

One immense advantage to be derived from the consolidation of slaughter-houses would be the increased value received from the by-products, which are practically lost by the small slaughterers. That the value of such by-products is an important item is apparent from the statement of Mr. J. Ogden Armour, made to the Bureau of Corporations in the recent investigation of the beef industry. He spoke as follows:

"The ability of wholesale butchers in the small towns to compete with the large packers in the sale of beef depends entirely upon conditions. At times such butchers can buy cattle so cheap that the large packers are almost excluded from doing business in their towns. When such a butcher has to buy his cattle in the same market that the large packers do, we are able, through our economies in manufacture and through making articles of value of what would go to waste in his establishment, to sell to the retailers at a lower price than the local wholesale butcher can do."

From this statement, and from other statements of a similar kind brought out by this investigation, it is evident that the value of the by-products is an important source of profit; in fact, it has been stated that the packing business of to-day would be carried on at a loss but for the utilization of the by-products. Whether this be true or not, it must be conceded that the saving of these products and converting them into articles of commercial value is a powerful argument for the centralization of small slaughter-houses. It is by this plan of concentration that the modern packing business has grown to its present magnitude, and by following the same plan it is possible for the small butcher to reap substantial rewards.

Consider for a moment that when animals are slaughtered not all of the product is edible meat. Fat cattle, for instance, dress only about 60 per cent. of the live weight, sheep 50 per cent., and hogs 80 per cent. The remainder need not be destroyed and become a total loss if there are proper facilities for handling it. This is done in modern abattoirs, but cannot be accomplished where there is not suitable equipment. From packing-house statistics it appears, in the case of cattle, that the value of the hide and

offal would probably increase the total percentage to 75. In other words, the 40 per cent. offal is equivalent in value to about 15 per cent. of the meat.

It would seem, if for no other reason than the saving of these by-products, that concentration in slaughtering and competent inspection should be advocated and upheld from a commercial point of view.

Not only will the concentration plan be commercially advantageous, but many of the local centers of infection for the spread of disease among man and animals be eliminated, as will also all of the small, poorly built and badly managed slaughter-houses. It will give the small butcher the advantages enjoyed by the large packing-houses, and enable them to produce a product as wholesome and as cheaply as their city brethren. Instead of increasing the cost the tendency of centralization is to reduce it, and to enable the producer to surround himself with sanitary conditions which are above criticism. The expense of such inspection should be provided for by a system of fees, a certain sum charged for the use of the municipal or county abattoir, and a graduated fee scale for the inspection of animals.

It is further suggested that the position of county veterinarian be established, who shall be the local meat inspector, and whose duty it shall be to make a thorough *post-mortem* inspection of all slaughtered animals within his jurisdiction. His salary should be provided for by fees for inspection, up to a certain stated sum, and all over and above that amount turned into the county treasury; or, if the fees collected do not provide a certain stated sum, that the balance of his salary be paid out of the county treasury. Where there is more than one public abattoir in the county, special days could be arranged for the slaughtering in each of the various houses within his jurisdiction.

The law should definitely define the requirements for the construction and operation of a sanitary abattoir, and the administrative detail of the same should be under the State Board of Health.

The person who deliberately robs invalids and innocent bottle-fed babes of a portion of their food supply by the addition of water to the milk which he sells is entitled to two things, viz., the limit of the penalty of the law of both fine and imprisonment, and the hearty contempt of every good citizen.

He is a wise man who puts a thoughtful purpose into the tale of his life.—Dr. S. S. Estey.

How Tuberculosis is Spread.

Perhaps most people contract tuberculosis from inhaling particles of dust carrying germs released by careless spitting. It is everywhere admitted that the mere breath of a consumptive is not infectious. But liquid particles containing the germs may be expelled during coughing, sneezing, and talking. It has been demonstrated that these particles may remain in the air for a distance of some twenty feet, and then they will subside by gravitation. It may be said that perhaps three-fourths of the danger of getting tuberculosis lies in expectorated matter. Eliminate this and the danger from milk, and the battle will be largely won.

Ingestion is a frequent way of contracting tuberculosis. Perhaps the most frequent way in which it is taken into the stomach is through the milk supply. In a recent investigation of the Washington milk supply, it was found that 18 per cent. of the cows furnishing milk for Washington use had tuberculosis. As one or two cows having tuberculosis on each dairy farm may contaminate the whole supply of that farm, the percentage of people who use that particular milk infected with tubercular bacilli is vastly greater. There has been some difference of opinion as to whether man could get tuberculosis from the cow. At one time even the eminent Dr. Koch threw the weight of his opinion in the scales against the idea. But more recent and thorough experiments demonstrate conclusively that people do contract it from the cows.

The tubercular infection is spreading to meats more rapidly under modern farm conditions. The neighborhood creameries in the rural districts are responsible, more than anything else, for this. Infected skim-milk from these establishments is fed to the hogs of the country road, and every porker that is not in the best of health falls a victim of the disease. Usually killing-time arrives long before the symptoms of the disease become apparent to the unpracticed eye of the farmer, hence a great deal of meat is unconsciously tainted. Likewise, meats, vegetables and fruits kept in open market stalls or carried around by vendors afford convenient resting-places for floating germs, and thus the disease is carried into the homes of the people—a worse enemy than the burglar who takes their valuables at night or the thief who steals them by day.—*Fred J. Haskins, in the Washington Herald.*

—

The House-fly and Tuberculosis.

The following communication, recently received, is published as being of interest in recording a new and hitherto unsuspected place for the breeding of flies. One can imagine that a fly reared and fed on such tubercular sputum would be a rather unwelcome guest at the dinner-table. Swat the fly!

OTTAWA, KAN., August 3, 1908.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

DEAR SIR—Permit me to congratulate you upon the vigorous fight you are making against flies. That these house insects are a greater source of infectious diseases than the public is generally aware was made very clear to me recently when I had an occasion to make an examination of sputum for tubercle bacillus. The sputum was brought to my office in an ordinary vaseline bottle with a screw top, and when I prepared some slides I was greatly surprised to find what appeared to be something alive. Upon closer examination they proved to be the larvæ of the ordinary house-fly, all alive (the common maggot). The sputum contained quantities of tubercle bacilli, which was confirmed by Doctor Greenfield, state bacteriologist. I am sending you by this mail the larvæ which were in the sputum, preserved with a little alcohol. I had intended to permit them to hatch out into flies, but on account of the warm weather the sputum underwent a mucous fermentation which killed the larvæ. This seems clearly to show that under certain conditions the human sputum becomes a breeding-place for the ordinary house-fly, and if the sputum should contain tubercle bacilli it can readily be seen how a swarm of flies hatching under these conditions can be a prolific source of infection for tuberculosis. I therefore say, let the good work go on. Down with the flies.

Very truly yours, JAMES BALL, M. D.

Simple Rules for School Children to Prevent Tuberculosis.

Dr. S. A. Knopf has recently issued a bulletin containing suggestions to school children as to how they may help to fight the Great White Plague, under the caption, "Simple Rules for School Children to Prevent Tuberculosis." These rules are worthy of a place in every schoolhouse in Kansas, and are as follows:

Do not spit except in a spittoon, a piece of cloth, or a handkerchief used for that purpose alone. On your return home have the cloth burned by your mother, or the handkerchief put in water until ready for the wash.

Never spit on a slate, floor, playground, or sidewalk.

Do not put your fingers into your mouth.

Do not pick your nose or wipe it on your hand or sleeve.

Do not wet your fingers in your mouth when turning the leaves of books.

Do not put pencils in your mouth or wet them with your lips.

Do not hold money in your mouth.

Do not put pins in your mouth.

Do not put anything in your mouth except food and drink.

Do not swap apple-cores, candy, chewing-gum, half-eaten food, whistles, bean-blowers, or anything that is put in the mouth.

Peel or wash your fruit before eating it.

Never sneeze or cough in a person's face. Turn your face to one side or hold a handkerchief before your mouth.

Keep your face, hands and finger-nails clean. Wash your hands with soap and water before each meal.

When you don't feel well, have cut yourself, or have been hurt by others, do not be afraid to report to the teacher.

Keep yourself just as clean at home as you do at school.

Clean your teeth with tooth-brush and water, if possible, after each meal; but at least on getting up in the morning and on going to bed at night.

Do not kiss any one on the mouth or allow anybody to do so to you.

Learn to love fresh air, and learn to breathe deeply and do it often.

It is suggested that these rules be read once a month by the teacher to the pupils in every schoolroom in the state. They would not only be helpful in the prevention of tuberculosis, but also in many of the other infectious and contagious diseases to which children are subject.

The Human Body.

A pupil in a village school, who had been requested to write an essay on the human body, handed in the following:

"The human body consists of the head, thorax, abdomen and legs. The head contains the brains, in case there are any. The thorax contains the heart and lungs, also liver and lights. The abdomen contains the bowels, of which there are five—a, e, i, o, u, and sometimes w and y. The legs extend from the abdomen to the floor, and have hinges at the top and middle to enable a fellow to sit when standing or to stand when sitting."—*Texas Medical Times.*

Truth and Poetry Concerning the Fly.

TILTON'S POETRY.

Baby bye, here's a fly,
Let us watch him, you and I.
There he goes, on his toes
Tickling baby's nose.

I can show you if you choose
Where to look to find his shoes.
Three small pairs, made of hairs;
These he always wears.

I believe with six such legs
You and I could walk on eggs.
How he crawls on the walls,
Yet he never falls.

THE TRUTH.

Baby bye, lets look at that fly
Through the microscope, you and I.
All kinds of woes are on his toes
Which he wipes on baby's nose.

See him flit to that spit,
Near the bench where consumptives sit.
Every speck from feet to neck
Carries bacilli, I suspect.

In nastiest dung he lays his eggs
And gathers germs on his tiny legs.
Then he crawls on the walls
Of our bedrooms and our halls.

See him walk through cesspool and stable,
Then go direct to the dining-table.
The fever germs on his fairy feet
He leaves upon the food we eat.

I can show you if you choose
Diarrhea germs upon his shoes.
These he takes to baby's cakes,
Then the baby's stomach aches.

Baby bye, let's kill that fly,
We don't like him, you and I.
To him there stick, so very thick,
All sorts of things that make us sick.

—Rocky Ford Gazette.

RHYME TO THE DREAM MAKER.

Down near the end of a wandering lane,
That runs 'round the cares of the day,
Where Conscience and Memory meet and explain
Their quaint little quarrels away,
A misty air-castle sits back in the dusk
Where brownies and hobgoblins dwell,
And this is the home
Of a busy old gnome
Who is making up dream things to sell,
My dear,
The daintiest dream things to sell.

He makes golden dreams out of wicked men's
sighs,
He weaves on the thread of a hope
The airiest fancies of pretty brown eyes,
And patterns his work with a trope.
The breath of a rose and the blush of a wish
Boiled down to the ghost of a bliss,
He wraps in a smile
Every once in a while
And calls it the dream of a kiss,
Dear Heart,
The dream of an unborn kiss.

Last night when I walked through the portals of
sleep,
And came to the weird little den,
I looked in the place where the elf-man should
keep
A dream that I could buy now and then.
'Tis only the sweet, happy dream of a day—
Yet one that I wish may come true—
But I learned from the elf
That you'd been there yourself,
And he'd given my dream to you,
Sweetheart,
He'd given our dream to you.

— William Allen White.

Emporia, Kan.

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No. 10.

OCTOBER, 1908.

VOL. IV.

Tuberculosis is an infectious disease, which also means that it is a preventable disease.

During the life of the present generation, a population exceeding that of the capital city of Topeka, with Oakland, Perry, Grantville, Rossville and Silver Lake thrown in, will have been wiped off the map by the Great White Plague; and yet, the great, prosperous, progressive state of Kansas has neglected and refused to spend a dollar directly for its suppression. "How long, Oh, Lord, how long!"

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VITAL STATISTICS

Reported to the Kansas Board of Health for September, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|-------------------------------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|-----------|-----------|-----------|----------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| The State... total, September, 1907... | 82 93 | 48 54 | 222 475 | 32 58 | 104 59 | 10 8 | 112 31 | 0 0 | 25 23 | 0 0 | 8 27 | 0 0 |
| Allen | 1 | 1 | 5 | 0 | 3 | 0 | 5 | 0 | 1 | 0 | 5 | 0 |
| Anderson | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barber | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barton | 1 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bourbon | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brown | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Butler | 1 | 1 | 2 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 |
| Chase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| †Chautauqua | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cherokee | 1 | 1 | 3 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| *Cheyenne | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clark | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clay | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Cloud | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Coffey | 0 | 0 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Comanche | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Cowley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crawford | 0 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Decatur | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Dickinson | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Douglas | 3 | 0 | 5 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| *Edwards | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Elk | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Ellsworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Finney | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford | 2 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Franklin | 2 | 2 | 7 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Geary | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Grant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Gray | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greeley | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Greenwood | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Hamilton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Harper | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Harvey | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Haakell | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Hodgeman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| Jefferson | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Jewell | 0 | 0 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Johnson | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kearny | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Kingman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Kiowa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labette | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 1 | 1 | 2 | 0 | 13 | 1 | 1 | 0 | 0 | 0 | 0 | 3 |
| †Linn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Logan | 2 | 2 | 44 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Lyon | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Marion | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marshall | 4 | 4 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| †McPherson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

CONTAGIOUS AND INFECTIOUS DISEASES—Continued.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|-----------|-----------|-----------|----------|-----------|
| | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... | Cases... | Deaths... |
| † Meade..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Miami..... | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell..... | 0 | 0 | 2 | 1 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montgomery..... | 0 | 0 | 2 | 1 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Morris..... | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Morton..... | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Neosho..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness..... | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Norton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Osborne..... | | | | | | | | | | | | |
| * Ottawa..... | | | | | | | | | | | | |
| * Pawnee..... | | | | | | | | | | | | |
| Phillips..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pottawatomie..... | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pratt..... | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Rawlins..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reno..... | 2 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Republic..... | 1 | 1 | 5 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| * Rice..... | | | | | | | | | | | | |
| * Riley..... | | | | | | | | | | | | |
| † Rocks..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell..... | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 1 | 1 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| * Scott..... | | | | | | | | | | | | |
| † Sedgwick..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Seward..... | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Shawnee..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheridan..... | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman..... | 1 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * Smith..... | | | | | | | | | | | | |
| Stafford..... | 1 | 1 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| † Stanton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Stevens..... | | | | | | | | | | | | |
| Sumner..... | 0 | 0 | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trego..... | 0 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Wabunsee..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Wallace..... | | | | | | | | | | | | |
| Washington..... | 0 | 0 | 1 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 |
| * Wichita..... | | | | | | | | | | | | |
| Wilson..... | 2 | 0 | 3 | 0 | 2 | 1 | 4 | 0 | 1 | 0 | 0 | 0 |
| Woodson..... | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| † Wyandotte..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 1 | 1 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coffeyville..... | 2 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City..... | 15 | 9 | 12 | 5 | 13 | 1 | 8 | 0 | 0 | 0 | 1 | 0 |
| Leavenworth..... | 3 | 3 | 1 | 1 | 8 | 0 | 10 | 0 | 0 | 0 | 1 | 0 |
| Parsons..... | 5 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pittsburg..... | 5 | 0 | 3 | 0 | 10 | 0 | 21 | 0 | 0 | 0 | 0 | 0 |
| Topeka..... | 1 | 1 | 3 | 2 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| * Wichita..... | | | | | | | | | | | | |
| State Institutions. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No contagious diseases in county.

‡ No health officer.

If the present death-rate from tuberculosis continues, 50,000 of the people now living in Kansas are doomed to die of this PRE-VENTABLE DISEASE.

FOOD ANALYSES No. XIX.

By PROF. E. H. S. BAILEY, Ph. D., Chemist for Board of Health, and
PROF. H. L. JACKSON, Food Analyst.

LEMON EXTRACTS.

No. 1324. Good Luck Flavoring Extract of Lemon. Manufacturer, Dr. J. H. Oyster, Paola, Kan. Retailer, G. N. Jewett, Edgerton, Kan. Contains only a trace of lemon-oil. Illegal.

No. 1358. Tincture of Lemon. Cort. Seventh Street Pharmacy. Manufacturer and retailer, R. L. Igel, Leavenworth. This is sold for lemon extract, but contains only 4.4 per cent. of lemon-oil, which is below the 5 per cent. standard. Illegal.

No. 1372. Extract of Lemon. Chas. Rebsomen, druggist. Manufacturer and retailer, Chas. Rebsomen, Leavenworth. Contains only a trace of lemon-oil. Illegal.

No. 6207. Passed.

No. 6211. Passed.

No. 6219. Passed.

No. 6222. Passed.

No. 6225. Passed.

No. 6227. Passed.

No. 6243. "2-oz. Full Measure Howell's Pure Extract of Lemon." Atlantic Importing Company, New York. Retailer, Ora J. Dillon, Kansas City. Passed in respect to oil of lemon content, but this sample is short measure 9.4 per cent.

No. 6245. Label correct. Passed.

No. 6246. Standard Extract of Lemon. Manufacturer, Malacca Mills, Kansas City. Retailer, W. C. Buck, Kansas City. Contains coal-tar dye, which is not declared, and contains no oil of lemon. Illegal.

No. 6248. "Extract of Lemon, made from oil of lemon. Grain spirits, 5 per cent., color natural." Manufacturer, Diamond Manufacturing Company, Kansas City. Retailer, Jas. Weise & Son, Kansas City, Kan. Contains no oil of lemon, as would be expected from the use of an alcohol so dilute as to contain only 5 per cent. grain spirits, in which the lemon-oil would be insoluble. Illegal.

No. 7211. Same brand and manufacturer as 6243 above. Passed in respect to content of lemon-oil, but is 6.3 per cent. short measure.

No. 7214. "Evans's Anchor Brand Double Strength Extract of Lemon, Pure, Strong, and Full Measure." Manufacturer, D. G.

Evans, St. Louis. Retailer, F. A. Potter, Fort Scott. Contains no oil of lemon. Illegal.

No. 7230. "Lemon Extract for Flavoring Delicacies. Contains 10 per cent. lemon-oil, 33 per cent. alcohol, saffron color." Manufacturer, Jones & Weigand Tea and Coffee Company, Wichita. Retailer, same. The per cent. of alcohol is as declared, but there is only a trace of lemon-oil present, as could be foretold by low per cent. of alcohol used.

No. 7231. Lemon Extract for Flavoring. Manufacturer, Jones & Weigand. Tea and Coffee Company. Retailer, same. Oil of lemon, only a trace. Illegal.

SOFT DRINKS.

| No. | Name. | Disposal. |
|-------|---------------------------------|-----------|
| 1347. | Strawberry..... | Illegal. |
| 6213. | Peach Mellow..... | " |
| 6214. | Grape..... | Passed. |
| 6215. | Rasport..... | Illegal. |
| 6216. | Lemon Sour..... | Passed. |
| 6217. | Ginger Ale..... | " |
| 6218. | Crema..... | " |
| 6230. | Cream Soda..... | " |
| 6231. | Sure Mike..... | " |
| 6232. | Root Beer Compound..... | " |
| 6233. | Strawberry..... | " |
| 6234. | Ginger Ale..... | " |
| 6235. | Kola Compound..... | " |
| 6236. | Lemon Sour..... | " |
| 6237. | Cream Soda..... | " |
| 6238. | Strawberry (broken in transit). | |
| 6239. | Sarsaparilla..... | Passed. |
| 6240. | (No label.) | |
| 6241. | Ginger Ale..... | Passed. |

The above were tested for preservatives, saccharin and coal-tar dyes. Preservatives and saccharin were not found.

No. 1347. Strawberry. Manufacturer, Geo. Grubel, Kansas City, Mo. Retailer, D. G. Jones, Kansas City, Kan. Contained coal-tar dye, which is not stated on the label, and saccharin as sweetening. Adulterated and misbranded. Illegal.

No. 6213. "Peach Mellow. Artificial, tastes like a ripe peach." Manufacturer, Bloomenthaw Bros., Philadelphia. The name of Colby Bottling Works, Colby, Kan., is also on label. Retailer not known. Contains coal-tar dye, which is not stated. Illegal.

No. 6215. "Rasport. Artificial, tastes just like ripe raspberries." Manufacturer, Westermeir, Colby, Kan. Retailer not known. Contains coal-tar dye, which is not stated. Illegal.

ALCOHOLIC BEVERAGES.

No. 3286a. Bottle bearing no label. Contains 1.74 per cent. absolute alcohol by volume.

No. 3286*b*. Bottle bearing no label. Contains 1.74 per cent. alcohol by volume.

No. 3286*c*. Bottle warranted to contain less than 2 per cent. alcohol. Passed.

No. 6242. Passed as to alcoholic content.

No. 7236. This bottle bore no label whatever and contains 4.8 per cent. alcohol by volume. Retailer, E. E. Mayers, Arcadia. Bought August 28, 1908.

No. 7240. Pop Ale. Purchased September 21, 1908, of Ives & Hantla, St. John. Manufacturer or dealer, the St. John Bottling Works. Great American Brand. Purchased by A. G. Pike, food inspector. This sample upon analysis contains less than three-tenths of one per cent. of alcohol by volume.

No. 7285. Waukesha Cream Ale. Purchased by A. G. Pike, food inspector, October 10, 1908, of J. W. Brown, Uniontown. Manufactured by the Milwaukee Waukesha Brewing Company. On analysis this sample is found to contain 1.67 per cent. of alcohol by volume.

NOTE.—Regarding No. 5061, as published in August BULLETIN: "Fruit Jelly." Libby, McNeill & Libby claim this as one of their brands, and state no starch is added to their jelly. They contend that the starch found must be due to the use of unripe apples. They ask that further analysis of their product be made, and that notification that the question is held in abeyance for further investigation be published.

DRUG ANALYSES No. XIV.

By L. E. SAYRE and PROF. A. ZIEFLE, Drug Analysts for the State Board of Health.

LAWRENCE, KAN., October 7, 1908.

We herewith present a report on the analysis of preparations and medicinal articles sent in by the drug inspectors.

We wish to call attention to the fact that in many cases the percentage of the alcohol content of preparations is not stated on label. It seems that not sufficient care is being exercised to label, or re-label, stock on hand, or there is evident negligence of the requirements of the food and drugs law as regards labeling, thus rendering the parties liable to the accusation of handling misbranded material. Attention should be called to regulation 7, section 9, of the Kansas law.

Tabulated statements of the results of analyses of some tinctures of iodine and spirits of camphor are included in the present report.

By mutual agreement of the two departments—foods and drugs—olive oils and salad oils that are sold as such, either through the drug stores or grocery stores, when sent to the laboratory, will in

the future be examined in the food laboratory, as these articles are considered primarily as foods.

No. 2132. AM OR OU (Bishop's). Penn Drug Company, Philadelphia, Pa. The preparation is in the form of tablets with a lavender-colored coating. They contain a large percentage of calcium, some ammonium and aluminum salts; also several vegetable drug extracts of a cathartic nature.

No. 2133, Insp. No. 868. Milk's Emulsion. Milk Emulsion Company, Terre Haute, Ind. This semisolid preparation is composed of 97.4 per cent. of petrolatum, 1 per cent. alcohol, and is aromatized with methyl salicylate. Misbranded, as it is stated to be a positive and guaranteed cure for stomach trouble, constipation, coughs, croup, asthma, etc.

No. 2171, Insp. No. 1157. Collin's Lemon Ginger. Robertson Drug Company, Coffeyville. An alcoholic preparation. The percentage of alcohol was not stated upon label. Misbranded.

No. 2172, Insp. No. 1145. Richtown Whiskey (a blend). W. & W. Drug Company, Coffeyville. Percentage of alcohol not stated. Sample contained 41.88 per cent. of alcohol. Misbranded.

No. 2173, Insp. No. 1139. Limestone Whiskey (a blend). The Owl Pharmacy, Coffeyville. The alcoholic content not stated upon the label. Preparation contains 45.6 per cent. of alcohol. Misbranded.

No. 2174, Insp. No. 1163. Star Malt. H. M. Bundy, Liberty, Kan. Preparation contains 5 per cent. of alcohol. Alcoholic content not stated upon label. Misbranded.

No. 2175, Insp. No. 1146. Blackberry Brandy. W. E. Hines, Coffeyville. The barrel from which sample was taken was labeled a cordial, and the percentage of alcohol was not stated. Sample contained 9.5 per cent. of alcohol. Misbranded.

No. 2176, Insp. No. 1142. Whiskey. Tennessee Drug Company, Coffeyville. The preparation was labeled 95 proof, which indicates 47.5 per cent. On analysis it was found to contain 48.4 per cent. of alcohol.

No. 2177, Insp. No. 1147. Two State Whiskey. W. & W. Drug Company, Coffeyville. Alcoholic content not stated. Sample contained 41.58 per cent. of alcohol. Misbranded.

No. 2178, Insp. No. 1141. Clayton & Russell Celebrated Stomach Bitters. Owl Pharmacy, Coffeyville. The address of the manufacturer is not given. The preparation contained 34.4 per cent. of alcohol. Alcoholic content not stated. Misbranded.

No. 2181, Insp. No. 1140. Schaaf's Cincinnati Club Beer. Owl Pharmacy, Coffeyville. Alcoholic content is not stated. Misbranded.

No. 2187, Insp. No. 1151. Schaaf's Cincinnati Club Beer. Fred Haines, Coffeyville. Alcoholic content not stated. Misbranded.

No. 2192, Insp. No. 1156. Syrup of Wild Cherry. Robertson Drug Company, Coffeyville. The sample had fermented. It contained an excess of dirty brown sediment. No trace of active constituents could be found. The preparation unfit for sale. Illegal.

No. 2198, Insp. No. 1164. Tincture of Arnica. H. M. Bundy, Liberty, Kan. Passed.

No. 2205, Insp. No. 1174. Phenol. Scott Bros., Le Hunt. The sample contained 78.73 per cent. of phenol.

No. 2210, Insp. No. 1176. Sweet Oil. Scott Bros., Le Hunt. Passed.

No. 2212, Insp. No. 1178. Sweet Oil. Harry Farlow, Bolton. Passed.

No. 2213, Insp. No. 1179. Sweet Oil. J. G. Adams, Bolton. Passed.

No. 2214, Insp. No. 1181. Infant Teething Syrup. Allen-Pfeiffer Chemical Company, St. Louis, Mo. The sample is a dark syrupy preparation containing ammonium chlorid, tolu, extract of glycyrrhiza and other expectorant drugs. The alcoholic and morphine content is plainly stated upon the label.

No. 2217, Insp. No. 1184. Druggists' Pride Whisky. C. H. Ward, Cherryvale. Barrel labeled a blend and 90 proof, which indicates 45 per cent. The sample contained 42.66 per cent. of alcohol. Misbranded.

No. 2219, Insp. No. 1186. Bourbon Compound Whisky. Swain & Strictler, Cherryvale. Barrel labeled a compound and 80 proof, which indicates 40 per cent. The sample contained 48 per cent. of alcohol.

No. 2223, Insp. No. 1190. Budweiser Beer. W. H. Kinney, Cherryvale. Alcoholic content not stated. Misbranded.

No. 2224, Insp. No. 1191. Bourbon Whisky. W. H. Kinney, Cherryvale. Barrel labeled a blend and 80 proof, which indicates 40 per cent. The sample contained 43.28 per cent. of alcohol.

No. 2227, Insp. No. 1194. Tincture of Nux Vomica. Gem Pharmacy, Cherryvale. Passed.

No. 2228, Insp. No. 1195. Octagon Club Whiskey. Gem Pharmacy, Cherryvale. Alcoholic content not stated. Sample contained 40.53 per cent. of alcohol. Misbranded.

No. 2231, Insp. No. 1198. Essence of Peppermint. Eagle

Drug Store, Cherryvale. The sample is deficient in oil and in alcohol; does not conform to the standard. Illegal.

No. 2232, Insp. No. 1199. Lime-water. Eagle Drug Store, Cherryvale. The sample is somewhat over one-half the official strength. Illegal.

No. 2233. Peach Kernel Oil. Squier and Frank, Cherryvale. The article is a clean fixed oil and not adulterated with other fixed oils.

CAMPHOR.

| Lab. No. | Insp. No. | City. | Per cent camphor. |
|----------|-----------|---------------|-------------------|
| 2134 | 1023 | Topeka | 8.8 |
| 2135 | 1025 | " | 11.1 |
| 2136 | 1032 | " | 10.0 |
| 2137 | 963 | Cedarvale | 5.5 |
| 2138 | 976 | Arkansas City | 10.0 |
| 2139 | 980 | Dexter | 12.1 |
| 2140 | 983 | Arkansas City | 5.5 |
| 2160 | 992 | Topeka | 10.0 |
| 2161 | 987 | " | 11.1 |
| 2162 | 1008 | " | 11.1 |
| 2163 | 1010 | " | 10.0 |
| 2164 | 1014 | " | 11.1 |
| 2165 | 7031 | Frontenac | 4.4 |
| 2166 | 1804 | Coffeyville | 10.0 |
| 2179 | 1137 | Parsons | 10.0 |
| 2180 | 1138 | " | 17.6 |
| 2183 | 1144 | Coffeyville | 10.0 |
| 2186 | 1150 | " | 10.0 |
| 2188 | 1152 | " | 8.8 |
| 2191 | 1155 | " | 4.4 |
| 2193 | 1158 | " | 12.1 |
| 2195 | 1160 | " | 11.1 |
| 2199 | 1165 | Liberty | 8.8 |
| 2200 | 1166 | Coffeyville | 21.1 |
| 2202 | 1168 | " | 7.7 |
| 2203 | 1169 | " | 10.0 |
| 2207 | 1173 | " | 11.1 |
| 2209 | 1175 | Le Hunt | 6.6 |
| 2211 | 1177 | Bolton | 8.8 |
| 2221 | 1188 | Cherryvale | 14.4 |
| 2225 | 1192 | " | 11.1 |
| 2229 | 1196 | " | 12.1 |

The official standard requires that each 100 cc. of tincture of iodine shall contain 6.860 gms. of iodine. The following report shows the number of grams of iodine per 100 cc. of the tincture:

IODINE.

| Lab. No. | Insp. No. | City. | Gms. per 100 cc. |
|----------|-----------|------------------|------------------|
| 2182 | 1143 | Coffeyville | 5.360 |
| 2185 | 1149 | Kansas City, Mo. | 7.347 |
| 2189 | 1153 | Coffeyville | 6.860 |
| 2190 | 1145 | " | 3.300 |
| 2194 | 1159 | " | 7.498 |
| 2197 | 1163 | " | 5.640 |
| 2205 | 1171 | " | 8.183 |
| 2216 | 1183 | " | 3.638 |
| 2218 | 1185 | " | 7.808 |
| 2220 | 1187 | " | 7.354 |
| 2222 | 1189 | " | 4.323 |
| 2226 | 1198 | " | 4.083 |
| 2230 | 1197 | " | 4.000 |

STATE WATER SURVEY, No. II.

By E. H. S. BAILLY, Ph. D., Chemist, and A. J. WIRTH, B. S., Assistant.

LAWRENCE, KAN., October 20, 1908.

Most of the time of the water survey laboratory, since the last report was made (Bull. State Board of Health, vol. IV., p. 107) has been taken up with the analyses of the series of waters from the twenty-three stations of Kansas rivers. There have, however, been numerous calls for sanitary analyses of municipal waters for present or proposed city supply.

We have to report the following:

SANITARY ANALYSIS OF CITY WATER SUPPLIES.
(Parts per million.)

| No. | City. | Date, 1908. | Nitrogen as free am- monia..... | Nitrogen as albuminoid ammonia..... | Nitrogen as nitrites..... | Nitrogen as Nitrates..... | Chlorine..... | Solids..... | Loss..... | Sulfates..... |
|-----|--------------------|----------------|---------------------------------------|-------------------------------------------|------------------------------|------------------------------|---------------|-------------|-----------|---------------|
| 20 | Cottonwood Falls.. | 6 11 | 0.045 | 0.127 | 0.564 | none | 4.0 | 237.4 | 6.0 | 8.23 |
| 21 | Arkansas City.... | 7 30 | 0.010 | 0.068 | 45.000 | 0.0086 | 116.0 | 821.0 | 72.0 | ..... |
| 22 | Kiowa..... | 8 4 | 0.080 | 0.106 | 0.900 | trace | 17.0 | 706.0 | 91.0 | 185.00 |
| 23 | Geuda Springs.... | 8 29 | 0.210 | 0.114 | 0.067 | none | 102.0 | 3,020.0 | 350.0 | very high |
| 24 | Augusta.....(a) | 8 3 | 0.015 | 0.085 | 73.600 | none | 45.0 | 844.6 | 127.6 | ..... |
| | ".....(b) | 8 3 | 0.080 | 0.075 | 64.200 | none | 280.0 | 1,487.0 | 178.0 | ..... |
| | ".....(c) | 8 3 | 0.077 | 0.106 | 9.000 | 1.0150 | 24.0 | 518.0 | 41.6 | 109.40 |
| 25 | St. Marys.....(a) | 9 17 | 0.088 | 0.086 | 10.800 | 0.0180 | 454.6 | 698.0 | 82.0 | ..... |
| | ".....(b) | 9 17 | 0.020 | 0.085 | 14.400 | none | 53.6 | 790.0 | 102.0 | ..... |
| | ".....(c) | 9 17 | 0.010 | 0.177 | 22.600 | 0.3090 | 2,193.0 | 1,040.0 | 108.0 | ..... |
| | ".....(d) | 9 17 | 0.060 | 0.340 | 14.200 | 0.0270 | 6,131.0 | 111.0 | 150.0 | ..... |
| | ".....(e) | 9 17 | 0.129 | 0.065 | 21.700 | trace | 90.3 | 1,116.0 | 148.0 | ..... |
| | ".....(f) | 9 17 | 0.119 | 0.085 | 43.400 | none | 89.6 | 909.0 | 142.0 | ..... |
| | ".....(g) | 8 26 | 0.024 | 0.082 | 49.700 | none | 89.1 | 1,010.0 | 230.0 | 121.00 |
| | ".....(h) | 8 26 | 0.072 | 0.080 | 45.200 | trace | 72.2 | 980.0 | 232.0 | 117.00 |
| | ".....(i) | 9 25 | ..... | ..... | 54.200 | none | 73.6 | 996.0 | 119.0 | 88.39 |
| | ".....(j) | 9 25 | ..... | ..... | 6.300 | none | 25.5 | 686.0 | 81.0 | 125.40 |
| | ".....(k) | 9 25 | ..... | ..... | 3.200 | none | 27.4 | 483.0 | 52.0 | 493.00 |
| | ".....(l) | 9 25 | ..... | ..... | 9.790 | trace | 57.1 | 795.0 | 114.0 | 139.00 |
| | ".....(m) | 9 25 | ..... | ..... | 15.800 | none | 214.4 | 972.0 | 142.0 | 204.30 |
| | ".....(n) | 9 25 | ..... | ..... | 13.500 | none | 47.5 | 981.0 | 116.0 | 76.50 |
| | ".....(o) | 9 25 | ..... | ..... | 20.190 | none | 96.8 | 1,204.0 | 94.0 | 337.40 |

20. Cottonwood Falls.—Sample from big spring in the limestone formation in a pasture two and one-half miles southwest of the city. Proposed source of city supply. Yields 1000 gallons of water per minute. An excellent water.
21. Arkansas City.—Spring water mixed with some surface water, as the spring is on low ground toward the west side of the city. This is the present source of the city supply. The water is probably somewhat contaminated by surface drainage. Quality doubtful. Demands further investigation.
22. Kiowa.—New source of proposed city supply. This is from a well outside the city in a pasture. The sulfates are high, but it is almost impossible to obtain a water in this section which does not contain relatively large quantities of sulfates.

23. Geuda Springs.—Sample from an artesian well that was sunk during the past summer.
24. Augusta.—(a) From a private well. (b) From a private well. (c) From the Santa Fe well in the southeast part of town. Comparing these samples, it is evident that the so-called Santa Fe well is preferable; and this is especially noticeable on account of the comparatively low mineral matter as shown by a comparison of the total solids. These waters are also somewhat high in sulfates. The nitrogen in nitrates is also very much lower than in the Santa Fe well. There is enough difference here to lead one to suspect that samples (a) and (b) may be somewhat impure from previous contamination with organic matter. Further investigation by means of prospect wells is being made.
25. St. Marys.—In the effort to obtain satisfactory water for the use of the city of St. Marys, several lots of samples have been examined. A lot of two samples was received August 26. These are marked (g) and (h). Another lot was received September 17. These are marked from (a) to (f) inclusive. A third lot was obtained by Messrs. Bailey and Hoad, personally, on September 25. These include the samples from (i) to (o) inclusive. (a) Sample from well at St. Mary's College, near the creek. The well is 57 feet deep, surroundings good. (b) Sample from brick-yard well, 55 feet deep. Water in this vicinity, or a little west, is reputed as being extremely salt. (c) From Meek's well, near railroad-track in the east part of city. (d) Sample from O'Ruke's well, in the city. (e) Sample from Hegner's well, opposite city hall, 35 feet deep. (f) From Union Pacific railroad well. This is an eight-inch bored well, and is down 60 feet. (g) From the Walsh well, not far from the center of the city. (h) From the Burns' well, near the center of the city. (i) From O'Ruke's well, 46 feet deep, in the city. (j) From well of A. B. Poole, west of city, near the ravine. (k) From well of G. Rezac, west of the city. Well is 44 to 46 feet deep. (l) Sample from well at Rezac's pond. Well 14 feet deep, with 6 feet of water. (m) From well of Wm. Farrell, south of College. (n) Sample from Sipes' livery stable well. (o) Sample from city well at corner of public square.

A very important fact, and one that made a more complete examination seem advisable, was the high nitrogen as nitrates in some of these waters. The nitrates were high in the wells in the central and eastern parts of the city. Unless high nitrates can be explained in some other way, their presence is usually attributed to previous sewage or organic contamination. It is possible that the salt-water referred to above carries with it considerable nitrates. The other possible supposition would be that the sheet of water, flowing beneath the city to the eastward, has become contaminated by the drainage from the town. This latter supposition seems to be rather confirmed by the fact that the wells to the west of the city show less nitrogen as nitrates. They are also, however, low in chlorin and in total mineral matter. On this account, therefore, prospect wells have been sunk to the west of the city and a sample of water from one of these borings shows upon analysis: Nitrogen as nitrates, 15.8 parts; strong trace of nitrites; 15.6 parts chlorin; 0.668 parts of mineral matter on evaporation, and 183 parts loss on ignition. The free and albuminoid ammonia were higher than in some of the other waters, but that can be accounted for by the turbidity of the sample. It really makes a great difference in choosing a water for domestic supply whether it contains 600 parts of mineral matter in a million parts of water, or twice that amount. The saving in soap, and the diminished boiler scale amount to large sums in the aggregate. Taken all together the waters on the western side of the city seem to be satisfactory, and have been recommended as a source of supply.

Echoes from the International Congress on Tuberculosis.

The great International Congress on Tuberculosis, which was held in Washington, D. C., September 21 to October 12, was in many respects the most remarkable gathering of scientific men ever held in the history of the world. Over 4000 delegates were in attendance during a part or all of the sessions, from thirty-three different countries, including representatives of all the principal civilized governments of the world. The papers and discussions were of a high order of excellence, as might be expected, for many of the most noted authorities in the world in their special lines, including physicians, surgeons, bacteriologists, sociologists, educators, philanthropists, statisticians, industrialists, veterinarians, nurses, lawyers, and statesmen were in attendance. The exhibits were the most complete and extensive ever gathered together under one roof. To view this was in itself a liberal education.

The real work of the congress began on September 28, when seven different sections trained their guns on the seven sides of the tubercular problem, as outlined by the central committee. A distinct optimistic note pervaded the entire congress, and one instinctively felt that the goal of tuberculosis control was almost in sight, and that a new era had dawned in the fight against "the great white plague" by a correlation and union of the forces of the world in offensive and defensive warfare and means of prevention.

The congress was unanimous in the opinion that the problem was an industrial and social one before a medical one, and that the first and foremost fundamental principle underlying its successful solution was that of the education of the people along the line of cause and prevention. We suffer from disease through ignorance; we may escape through knowledge. It was also agreed on every hand, as has been known since the discovery of the tubercle bacillus by Koch in 1882, that tuberculosis is an infectious disease. But this is an encouraging fact, if it is also an alarming one, for an infectious disease is *always a preventable disease*.

It seems to be now quite generally recognized that a change of climate, as ordinarily interpreted, is not at all essential in accomplishing a cure of pulmonary tuberculosis. The records of cures of incipient cases in the Eastern states and on the continent compare favorably with similar institutions in the Rocky Mountain states. It would seem, therefore, that the most beneficial change of climate that the Kansas consumptive can make is to simply

move outdoors. And in this connection the writer has changed his opinion concerning the proper location for a state sanatorium, which is that such location should be as near the center of population as the securing of pure, dust-free air, a wholesome water supply, and the installation of perfect sewage facilities will permit.

Naturally, Prof. Robert Koch was the "lion" of the congress; and while he stands almost alone among the great scientists of the world in his opinion that the bovine tubercle bacillus is non-infectious for the human, yet he was personally treated with the greatest deference and most tender regard. At the great state dinner given by Secretary Root to the foreign delegates and the members of the central committee of the congress, Professor Koch was given the seat of honor, and after the dinner, when he arose to speak, his reception was such as even the president might envy.

A number of "swell" social functions were held during the congress, which gave the foreign representatives an opportunity to display their numerous decorations, medals, orders; etc., which, with the beautiful gowns of the ladies, made a brilliant display, greatly enjoyed by the Jawhawker delegation, but whose ideal of decoration is the modest sunflower and whose measure of a dress is a full dress.

Prof. Irving Fisher, of Harvard, opened the discussion in section V on Tuesday morning with a paper on "The Cost of Tuberculosis in the United States, and its Reduction."

This paper summarizes the cost of tuberculosis in lives, disability, unhappiness, and money.

"The death-rate from tuberculosis in all its forms in the United States is estimated at 164 per 100,000 of population, and the number of deaths in 1906 at 138,000. At this rate, of those now living in the United States 5,000,000 people will die of tuberculosis. The average age at death for males is 37.6 years; for females, 33.4 years. The 'expectation of life' lost (though estimated on a specially high mortality rate) is at least twenty-four years, of which at least seventeen fall in the working period. The average period of disability preceding death from tuberculosis exceeds three years, of which the latter half is a period of total disability.

"The money cost of tuberculosis, including capitalized earning power lost by death, exceeds \$8000 per death. The total cost in the United States exceeds \$1,100,000,000 per annum. Of this cost about two-fifths, or over \$440,000,000 per annum, falls on others than the consumptive. An effort to reduce the mortality by one-fourth would be worth, if necessary, an investment of \$5,500,000,000. The cost of treating patients at sanatoria is repaid many times over in lengthened working lives.

"The erection of isolation hospitals for incurables is probably

the most profitable method at present of reducing the cost of tuberculosis."

Applying Professor Fisher's figures to the conditions as they exist in Kansas, we conclude that of the present population now living in this state, more than 50,000 are doomed to die of tuberculosis, which figures are an economic loss, of \$400,000,000, to say nothing of the anguish, suffering, heartache and blighted lives of a multitude of the relatives and friends of this great army of martyrs to a preventable disease. And yet, and yet! the great state of Kansas has by its last two legislatures refused to provide for a state institution for the care and treatment of its tubercular poor. Will the graves of the 2500 Kansas people who have died from the scourge since the last regular session of the legislature have any effect on the sympathies and judgment of the new legislature?

The grand old Keystone state has at last been aroused to a rightful sense of her patriotic duty in this particular, and her last legislature voted \$1,500,000 for the study, care and prevention of tuberculosis in Pennsylvania.

It has been proven by repeated investigations that there are between four and five cases of tuberculosis in a given population for each recorded death in a year. Thus there are in Kansas at the present time somewhere between 4800 and 6000 cases of tuberculosis in some form, and it is pertinent to inquire again: Has the state a duty to perform in finding these places or centers of infection, to provide for measures of prevention, that the public health may be preserved, the uninfected remain so, and the unfortunate poor who are unable to provide for themselves be given a hope and show for their lives by the state's bounty and generosity?

Right here might be a good place to record the resolutions as unanimously adopted by the congress upon the closing day of its session.

The writer believes that if a body of men, representative of the best scientific skill, wide experience, and mature judgment of all the civilized countries of the world, have unanimously agreed upon the propositions set forth in these resolutions, it ought to be sufficient warrant for the legislatures of the various states to pass such laws as will put into speedy and effective operation ways and means herein set forth for tuberculosis control within its own borders. The resolutions follow:

RESOLUTIONS.

1. The attention of state and central governments should be called to the importance of proper laws for the obligatory notifica-

tion by medical attendants to proper health authorities of all cases of tuberculosis coming to their notice, and for the registration of such cases, in order to enable the health authorities to put into operation adequate measures for the prevention of the disease. We urge on the public and on all governments the establishment of hospitals for the treatment of advanced cases of tuberculosis.

2. We urge the establishment of sanatoria for curable cases of tuberculosis.

3. We urge the establishment of dispensaries, and day camps, and night camps, for ambulant cases of tuberculosis which cannot enter hospitals and sanatoria. Again, the utmost efforts should be continued in the struggle against tuberculosis to prevent conveyance from man to man of tuberculous infection as the most important source of the disease. Further, preventive measures must be continued against bovine tuberculosis, and the possibility of the propagation of this to man, should be recognized.

Resolved, That this congress endorses such well-considered legislation for the regulation of factories and workshops, the abolition of premature and injurious labor to women and children, and the securing of sanitary dwellings, as will increase the resisting power of the individual to tuberculosis and other diseases; that instruction in personal and school hygiene should be given in all schools for the professional training of teachers; that wherever possible such instruction in elementary hygiene should be entrusted to properly qualified medical instructors; that colleges and universities should be urged to establish courses in hygiene and sanitation, and also to include these subjects among their entrance requirements to stimulate useful elementary instruction in the lower schools. That this congress endorses and recommends the establishment of playgrounds as an important means of preventing tuberculosis, through their influences on health and resistance to disease.

(To be continued.)

The Ready Pump.

William Barclay Parsons, the famous engineer, is a foe to scamped work, and at a recent dinner in New York he said:

"That man is most unwise who tries to get his work done cheap. Cheap work can always be secured, but the quality of such work is on its face—"

Mr. Parsons, smiling, interrupted himself to tell a story.

"There was a man," he said, "who entered a dairy and asked how much the milk was.

"'Ten cents a quart, sir,' the young woman behind the counter answered.

"The man looked disappointed.

"'Have n't you any for six cents?' he asked.

"'No,' said the young woman, 'but,' she added, 'we can soon make you some.'"

DOIN' THINGS IN KANSAS.

We're raisin' cane in Kansas,
But not the Cain of old;
We're raisin' corn in Kansas,
That turns to yellow gold;
We're raisin' wheat in Kansas,
And we've a lot to spare—
(Two hundred by four hundred
Will grow wheat anywhere.)

We're raisin' hogs in Kansas,
Yes, raisin' 'em on hay—
Alfalfa in the meadows .
Has come with us to stay—
And cattle browse the pastures
Where the wild buffalo
Were roamin' in the desert
Not fifty years ago.

We're pumpin' oil in Kansas,
And sendin' it away;
We're lightin' up the cities,
With gas, as bright as day.
And hens lay eggs and cackle
(No better payin' crop),
And separator butter
Sells at the very top.

A feller died in Kansas,
And went to Heaven's door,
And asked to gain admission,
To stay for ever more.
"From Kansas?" said St. Peter,
"Your brain sure has a crack,
Y' better oil yer motor,
Git in and hike right back."

Written for the Bulletin by Ed. Blair.

Spring Hill, Kan.

BULLETIN

OF THE

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No. 11.

NOVEMBER, 1908.

VOL. IV.

Oh, the pity of it—5000 people of Kansas suffering from the preventable disease of tuberculosis! Won't you help?

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Reported to the Kansas Board of Health for October, 1908.

[illegible]

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|---------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|-----------|----------|----------|----------|
| | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. | Cases... | Deaths.. |
| *Meade..... | | | | | | | | | | | | |
| *Miami..... | | | | | | | | | | | | |
| *Mitchell..... | | | | | | | | | | | | |
| Montgomery..... | 0 | 0 | 5 | 2 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Morris..... | | | | | | | | | | | | |
| *Morton..... | | | | | | | | | | | | |
| Nemaha..... | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| *Neosho..... | | | | | | | | | | | | |
| Ness..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Osage..... | 1 | 1 | 1 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Osborne..... | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa..... | | | | | | | | | | | | |
| Pawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| *Phillips..... | | | | | | | | | | | | |
| Pottawatomie..... | 1 | 1 | 1 | 0 | 1 | 1 | 5 | 0 | 17 | 0 | 0 | 0 |
| Pratt..... | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Rawlins..... | | | | | | | | | | | | |
| Reno..... | 0 | 0 | 1 | 0 | 16 | 1 | 3 | 1 | 0 | 0 | 0 | 0 |
| Republic..... | 0 | 0 | 1 | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| *Rice..... | | | | | | | | | | | | |
| *Riley..... | | | | | | | | | | | | |
| Rooks..... | 1 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rush..... | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell..... | 1 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| Saline..... | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Scott..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Sedgwick..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Seward..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shawnee..... | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| *Sheridan..... | | | | | | | | | | | | |
| Sherman..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smith..... | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stafford..... | 1 | 1 | 3 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Stanton..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Stevens..... | | | | | | | | | | | | |
| Sumner..... | 1 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Thomas..... | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| *Trego..... | | | | | | | | | | | | |
| Wabaunsee..... | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| †Wallace..... | | | | | | | | | | | | |
| Washington..... | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| *Wilson..... | | | | | | | | | | | | |
| Woodson..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte..... | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison..... | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coffeyville..... | 2 | 1 | 2 | 1 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Kansas City..... | 3 | 7 | 4 | 0 | 21 | 3 | 23 | 1 | 0 | 0 | 2 | 0 |
| Leavenworth..... | 0 | 0 | 1 | 0 | 6 | 0 | 35 | 1 | 0 | 0 | 1 | 0 |
| Parsons..... | 4 | 2 | 1 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| Pittsburg..... | 0 | 0 | 0 | 0 | 34 | 2 | 78 | 0 | 0 | 0 | 0 | 0 |
| Topeka..... | 7 | 7 | 3 | 2 | 4 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| *Wichita..... | | | | | | | | | | | | |
| State Institutions. | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*No report.

†No health officer.

The Condition of Milk Served to Consumers in the State of Kansas. I.

By FREDERICK H. BILLINGS, Ph. D., and FRANK U. G. AGRELIUS, A. M.,
of University of Kansas.

It is not the purpose of this first paper to consider the subject of milk as a carrier of infectious disease germs, but rather to consider it as a harbinger of filth and an agent of distribution of many non-infectious though often death-producing bacteria. Milk plays such an important rôle in the food economy of the public that it is necessary to safeguard its purity and insure its wholesomeness. It is the sole diet of thousands of the human race at a critical time of life (infancy), and yet until comparatively recently nothing has been done to protect the innocent from the carelessness, ignorance or cupidity of those designed by nature and authorized by law to be their guardians.

There has been much attention paid of late to food adulteration, with the result that some needed legislation has been secured. This is, as a matter of course, praiseworthy, but that law would be still more useful which would discourage food contamination that sends a hundred to the grave where adulteration sends one.

Agitation for pure milk began when people were aroused to the fact that a skimmed or watered product was being served to them. The conscience of the average dairyman suffers no pangs when he knows that his product is whole milk. He does not realize that what is added to milk may be of greater hygienic importance than that which is extracted from it. With a cream percentage below the legal limit, it may still be very wholesome, as it contains its full quota of milk-protein and sugar.

Bacteria, together with the substances produced as the result of their activity, constitute the most important elements in milk which may affect the health of the consumer. These organisms may be divided roughly into three general sorts—lactic bacteria, filth bacteria, and pathogenic bacteria. The first two kinds are present in practically all milk, the third being frequently found. The lactic bacteria are the least harmful of the three. Milk with a preponderance of these organisms sours normally, and may be drunk by most people with impunity.

The case is not the same when organisms derived from filth find their way in large numbers into milk. Some of these produce toxic products as the outcome of their activity, with the result that the milk becomes poisonous, especially to young children.

There are several sources of these undesirable germs,^{*} but the principal source is the excrement of the cow herself. One gram (15 grains) of fresh excrement has in the neighborhood of 375,000,000 bacteria. When dried the number would be increased per unit of weight. The average cow is not groomed, nor is her udder wiped before milking. During the process of milking the udder is agitated, resulting in a shower of dirt, dried excrement, hair, dust, etc., all of which are laden with bacteria. Filth getting into the milk usually manifests itself as a deposit. A quart bottle of milk will often have a visible amount of filth at the bottom, betokening uncleanly methods at the dairy.

The amount of filth becomes quite appreciable when the total for a large city is considered. Thus it is estimated that the people of New York take daily with their milk 400 pounds of barn-yard filth, while the people of Berlin have 300 pounds served to them every twenty-four hours.

Standards of purity based on numerical estimates of bacteria per cubic centimeter* are arbitrary, but if attempts to enforce such standards result in decreased sickness and mortality their use is justified. The first city to set a standard was probably New York, which in 1900 set 1,000,000 as the maximum number of bacteria per cubic centimeter in market milk. Boston followed with a limit of 500,000. The health officer of the city of Rochester has regarded 100,000 as a fit standard for his dairymen. It is more difficult for the consumers in a very large city to obtain pure milk than for those in smaller cities and towns, for the reason that much of it comes from long distances, rendering it comparatively old before delivery. Repeated handling also invites contamination. In the smaller cities dairymen usually live on the edge of town, so that it is quite possible for them to get their product into the hands of their consumers a few hours after milking. For such, the maximum limit should be relatively low. It is sometimes low in instances where filthy conditions prevail at the dairy, so that a high count would be expected. The explanation of this lies in speedy delivery. If the milk is not consumed almost at once, the filth organisms are permitted to multiply in the home instead of in the dairyman's can.

According to one investigator (Bitter) no milk should be sold that contains over 50,000 bacteria per cubic centimeter. Another (Park) places the extreme limit at 100,000. Nearly all are agreed that 10,000 is the greatest number that milk which is fed to infants

* About twenty drops.

should contain. Such milk is generally called "certified" when it is regularly marketed and is inspected. In cities where tests have been made it has been shown that the ordinary market milk falls far short of being in the "certified" class.

The results of the tests in Kansas cities are given below in tabulated form. Samples were purchased in the open market and were taken at once to the laboratory. The original containers were used whenever possible. Sterile pint bottles were carried for collecting milk sold from cans.

The bacteriological methods used conform to those recommended in the preliminary report of the committee on milk analysis, American Public Health Association.

| CITY. | Milk sample number..... | Date, 1908. | Con- tainer. | Milk tempera- ture, Fahr..... | Outside tempera- ture, Fahr..... | Wagon or store. | Number of bacteria per cubic centimeter. |
|-------------------|-------------------------|-------------|--------------|-------------------------------|----------------------------------|-----------------|------------------------------------------|
| Kansas City, Kan. | 1 | Aug. 4 | Bottle..... | 55° | 90° | Store..... | 34,000,000 |
| " | 2 | " 4 | " | 61 | 90 | " | 6,660,000 |
| " | 3 | " 4 | Can..... | 59 | 90 | " | 320,000 |
| " | 4 | " 5 | Bottle..... | 37 | 81 | " | 48,000,000 |
| " | 5 | " 5 | " | 57 | 81 | " | 120,000* |
| " | 6 | " 5 | " | 55 | 84 | " | 2,150,000 |
| " | 7 | " 5 | Can..... | 82 | 86 | Wagon..... | 600,000 |
| " | 8 | " 5 | " | 66 | 87 | Store..... | 340,000 |
| " | 9 | " 5 | " | 75 | 88 | Wagon..... | 340,000 |
| " | 10 | " 5 | Bottle..... | 59 | 89 | Store..... | 210,000 |
| " | 11 | " 6 | " | 72 | 82 | " | 310,000 |
| " | 12 | " 6 | " | 68 | 82 | " | Under 10,000 |
| " | 13 | " 6 | Can..... | 68 | 82 | " | 1,800,000 |
| " | 14 | " 6 | Bottle..... | 84 | 89 | " | 30,400,000 |
| Topeka | 15 | Jul. 28 | " | 56 | 84 | " | 13,290,000 |
| " | 16 | " 28 | Can..... | 81 | 83 | Wagon..... | 69,000,000 |
| " | 17 | " 28 | " | 80 | 86 | Store..... | 3,990,000 |
| " | 18 | " 29 | " | 74 | 85 | " | 1,360,000 |
| " | 19 | " 28 | " | 59 | 89 | " | 4,950,000 |
| " | 20 | " 29 | Bottle..... | 78 | 87 | " | 40,000,000 |
| " | 21 | " 29 | " | 60 | 74 | " | 3,920,000 |
| " | 22 | " 30 | " | 60 | 84 | Wagon..... | 11,000,000 |
| " | 23 | " 29 | Can..... | 73 | 86 | " | 1,790,000 |
| " | 24 | " 30 | Bottle..... | 79 | 83 | Store..... | 620,000 |
| " | 25 | " 30 | Can..... | 87 | 85 | Wagon..... | 4,000,000 |
| " | 26 | " 30 | Bottle..... | 59 | 90 | Store..... | 2,420,000* |
| " | 27 | " 30 | " | 61 | 90 | " | 19,370,000* |
| " | 28 | " 30 | Can..... | 68 | 90 | " | 66,000,000 |
| Wichita | 29 | Aug. 20 | Bottle..... | 68 | 70 | " | 290,000 |
| " | 30 | " 20 | " | 63 | 75 | " | 1,860,000 |
| " | 31 | " 20 | " | 69 | 78 | " | 2,540,000 |
| " | 32 | " 20 | " | 61 | 78 | " | 49,000,000 |
| " | 33 | " 20 | " | 57 | 78 | " | 760,000 |
| " | 34 | " 20 | " | 57 | 75 | " | 2,120,000 |
| " | 35 | " 21 | " | 65 | 72 | " | 2,810,000 |
| " | 36 | " 21 | " | 63 | 73 | " | 10,000 |
| " | 37 | " 21 | " | 74 | 75 | Wagon..... | 60,000 |
| " | 38 | " 21 | " | 79 | 75 | " | 250,000 |
| Hutchinson | 39 | " 25 | " | 74 | 77 | " | 70,000 |
| " | 40 | " 25 | " | 76 | 77 | " | 620,000 |
| " | 41 | " 25 | " | " | " | " | 64,000,000 |
| " | 42 | " 25 | Can..... | 84 | 82 | " | 440,000 |
| " | 43 | " 26 | " | 82 | 82 | " | 570,000 |
| " | 44 | " 26 | Bottle..... | 66 | 83 | " | 570,000 |
| " | 45 | " 26 | " | 52 | 83 | " | 150,000 |
| " | 46 | " 26 | Can..... | 79 | 84 | " | 4,380,000 |
| Coffeyville | 47 | " 11 | " | 82 | 79 | " | 8,500,000 |

| CITY. | Milk sample number..... | Date, 1908. | Con-tainer. | Milk temper-ature, Fahr..... | Outside temper-ature, Fahr..... | Wagon or store. | Number of bacteria per cubic centimeter. |
|-------------------|-------------------------|-------------|-------------|------------------------------|---------------------------------|-----------------|------------------------------------------|
| Coffeyville..... | 48 | Aug. 11 | Can..... | 68 | 79 | Store..... | 200,000 |
| " | 49 | " 11 | " | 86 | 84 | Wagon..... | 280,000 |
| " | 50 | " 12 | " | 86 | 81 | Store..... | 620,000 |
| " | 51 | " 12 | " | " | " | Wagon..... | 320,000 |
| " | 52 | " 12 | " | 82 | 90 | " | 140,000 |
| " | 53 | " 12 | " | 86 | 82 | Store..... | 450,000 |
| " | 54 | " 12 | " | 88 | 82 | Wagon..... | 70,000 |
| " | 55 | " 12 | " | 85 | 82 | " | 390,000 |
| Independence..... | 56 | " 13 | Bottle..... | 52 | 77 | " | Under 10,000* |
| " | 57 | " 13 | Can..... | 78 | 79 | " | 430,000 |
| " | 58 | " 13 | " | 84 | 86 | " | 680,000 |
| " | 59 | " 14 | " | 82 | 80 | " | 1,260,000 |
| " | 60 | " 14 | " | 90 | 81 | " | 170,000 |
| Pittsburg..... | 61 | Sep. 16 | " | 84 | 93 | " | 20,000 |
| " | 62 | " 17 | " | 73 | 72 | " | 40,000 |
| " | 63 | " 16 | " | 78 | 80 | " | 3,050,000 |
| " | 64 | " 16 | " | 86 | 89 | " | 340,000 |
| " | 65 | " 17 | " | 72 | 72 | " | 250,000 |
| " | 66 | " 17 | " | 69 | 75 | " | 300,000 |
| Fort Scott..... | 67 | " 18 | " | 72 | 75 | " | 670,000 |
| " | 68 | " 18 | " | 81 | 74 | " | 80,000 |
| " | 69 | " 17 | " | 89 | 88 | " | 92,000 |
| " | 70 | " 18 | " | 75 | 84 | " | 60,000 |
| " | 71 | " 18 | " | 90 | 74 | " | 30,000 |
| " | 72 | " 18 | " | 80 | 82 | " | 40,000 |
| Emporia..... | 73 | " 25 | " | 86 | 72 | " | 220,000 |
| " | 74 | " 25 | " | 74 | 72 | " | 180,000 |
| " | 75 | " 25 | " | 78 | 77 | " | 2,500,000 |
| " | 76 | " 25 | " | 82 | 81 | " | 3,330,000 |
| " | 77 | " 25 | " | 84 | 90 | " | 50,000 |
| " | 78 | " 25 | " | 82 | 73 | " | 10,000 |
| Lawrence..... | 79 | " 11 | Bottle..... | 63 | 72 | " | 30,000 |
| " | 80 | " 11 | Can..... | 74 | 72 | " | 40,000 |
| " | 81 | " 11 | " | 68 | 77 | " | 80,000 |
| " | 82 | " 11 | " | 84 | 80 | " | 1,640,000 |
| " | 83 | " 12 | " | 81 | 75 | " | 70,000 |
| " | 84 | " 12 | Bottle..... | 80 | 75 | " | 40,000 |
| " | 85 | " 12 | Can..... | 66 | 75 | " | 320,000 |
| " | 86 | " 12 | " | 64 | 80 | " | 480,000 |
| " | 87 | Oct. 16 | Bottle..... | 69 | 73 | " | 20,000 |
| Leavenworth..... | 88 | " 3 | Can..... | 68 | 61 | " | Under 10,000 |
| " | 89 | " 2 | Bottle..... | 55 | 72 | Store..... | 870,000 |
| " | 90 | " 3 | Can..... | 79 | 68 | " | 50,000 |
| " | 91 | " 3 | " | 80 | 61 | Wagon..... | Under 10,000 |
| " | 92 | " 3 | " | 61 | 64 | " | 750,000 |
| " | 93 | " 3 | " | 65 | 70 | " | Under 10,000 |
| " | 94 | " 3 | " | 68 | 65 | " | Under 10,000 |
| " | 95 | " 3 | " | 22 | 70 | Store..... | 200,000 |
| Atchison..... | 96 | " 10 | " | 61 | 57 | Wagon..... | Under 10,000 |
| " | 97 | " 9 | " | 50 | 50 | " | 610,000 |
| " | 98 | " 9 | " | 57 | 52 | " | 10,000 |
| " | 99 | " 9 | " | 74 | 54 | " | Under 10,000 |
| " | 100 | " 9 | Bottle..... | 59 | 58 | " | 120,000 |
| " | 101 | " 10 | Can..... | 70 | 59 | " | Under 10,000 |

* Pasteurized.

Conclusions of interest may be drawn from the facts contained in the table. It will be seen that bottles were used for milk in about 37 per cent. of the tested cases. It is evident that, other things being equal, a container sealed at the dairy will deliver its contents more nearly free from contamination than one which exposes it at times, as when cans are used. An examination of the table, however, will indicate that bottles are no guarantors of good milk. They serve as one of several means to an end—clean milk—

but dairymen and consumers should know that the bottle is perhaps the least efficient of these means. If clean, cold, fresh milk is put into a bottle and the whole kept cold, the container serves a good purpose in preserving the purity of the milk, provided, of course, the bottle was thoroughly cleaned before use. No bottle will improve the condition of warm, dirty milk.

Another point to be noted in the above statistics is the relatively high temperatures at which milk is kept during delivery or while on sale. In one instance only is it recorded as being as low as 50 deg. F., and then the outside temperature was the same. Only 16 per cent. delivered milk under 60 deg. F. In endeavoring to better its milk supply, Boston set 50 degrees as the maximum temperature for milk during delivery. If there is to be any improvement in the Kansas milk supply, one of the efficient methods of attaining it is to require milk to be kept cold, beginning with the time it is milked and continuing until delivery. When obtained under moderately clean conditions milk will contain at first about 500 to 1500 bacteria per cubic centimeter. According to the published accounts of several eminent bacteriologists, fresh milk, cooled rapidly to 50 deg. F. or below, will show little or no multiplication of bacteria for about twelve hours. Hence it would not appear to be such a difficult matter to deliver milk with a reasonably low germ count. Very few, however, of the dairymen in the towns visited used either ice or cold water.

Low temperature discourages the growth not only of the lactic bacteria that induce souring, thus destroying the keeping quality of milk, but also those organisms that secrete toxins, or render the milk poisonous to bottle-fed infants. For the last reason, if for no other, it is worth while to insist on properly cooled milk, knowing that this is one of the important conditions governing its wholesomeness.

The time of year in which milk is handled and delivered affects, under present conditions, the number of bacteria contained in it—this for the simple reason that the temperature varies with the seasons. It would be expected that milk handled in winter would be more wholesome on account of diminished numbers of organisms due to the cold—a fact attested by the decrease in mortality of bottle-fed infants at this time of year. Even with no attempt at artificial cooling, milk left to stand in unheated quarters will become chilled quite rapidly. The statistics in the table do not show winter tests, but comparative estimates in cities outside of Kansas have been made. For instance, according to Park, the

milk of New York averages about 300,000 per cubic centimeter in the coldest weather, 1,000,000 during cool weather, and 5,000,000 in hot weather. Some tests were made in Topeka during a cool spell in the last part of October. The results are tabulated separately. The milk temperatures will be seen to be low, only one being above 60 deg. F. But three, however, are under 50 deg. F., yet it is doubtless true that the small numbers of bacteria per cubic centimeter, as compared with the summer estimates, are due to the approximation of their temperatures to 50 degrees.

| Milk sample, No. | Date, 1908. | Container. | Milk tempera- ture, Fahr..... | Outside tempera- ture, Fahr..... | Wagon or store. | Number of bacteria per cubic centimeter. |
|---------------------|----------------|-------------|----------------------------------|-------------------------------------|--------------------|---------------------------------------------------|
| 102..... | Oct. 30 | Bottle..... | 52° | 47° | Store..... | 450,000 |
| 103..... | " 30 | " | 55 | 52 | " | 60,000 |
| 104..... | " 31 | " | 52 | 40 | Wagon..... | 40,000 |
| 105..... | " 31 | " | 48 | 43 | " | 150,000 |
| 106..... | " 31 | Can..... | 54 | 43 | " | Under 10,000 |
| 107..... | " 31 | " | 63 | 47 | " | 10,000 |
| 108..... | " 31 | Bottle..... | 54 | 55 | " | 20,000 |
| 109..... | " 31 | " | 47 | 61 | Store..... | 20,000 |
| 110..... | " 31 | " | 53 | 61 | " | Under 10,000 |
| 111..... | " 31 | " | " | " | " | 10,000 |
| 112..... | " 31 | " | 55 | 46 | Wagon..... | " 10,000 |
| 113..... | " 31 | " | 52 | 46 | " | " 10,000 |
| 114..... | " 31 | " | 44 | 46 | Store..... | 40,000 |

It was primarily for the number of bacteria per cubic centimeter that the canvass for milk samples in Kansas cities was made. Excessive numbers indicate either filth, warm and old milk, or milk from cows suffering with diseased udders. While a mere number per unit of volume does not always distinguish one cause from another, it reveals the fact that something is wrong, and that steps should be taken to remedy the evil and so lower the count, which only indicates the evil.

As has been stated, filthy milk, or that from diseased cows, is unwholesome, especially for infants. Adults can often drink such milk without apparent harm—a fact, perhaps, accounting for public indifference to unsanitary milk. Luebbert conducted some experiments testing the toxic properties of milk containing peptonizing bacteria from filth. The milk was fed to guinea-pigs and puppies, also an adult dog. The pigs and puppies were taken with violent diarrheal symptoms that resulted in death. The adult dog was not perceptibly affected.

Statistics show that infants succumb in large numbers to filthy, germ-laden milk. Vaughn says this is due to the readiness with

which an infant's alimentary canal absorbs casein, together with the permeability of the intestinal wall to bacteria. Behring, a German investigator, says that for 1000 male German babies born, about 510 only reach manhood; and of these but one-third are fit for military service. He lays this to the feeding of filthy milk to children during their early infancy.

There are good grounds for believing that summer complaint in infants is often associated with impure milk. Children who are sick from drinking it frequently become convalescent when good milk is fed to them. The Straus philanthropy, through which so many New York children have been enabled to procure pasteurized milk, has exerted a lowering effect on the mortality statistics roughly in proportion to its sales.

Statistics relative to the death-rates of bottle-fed and breast-fed children have been gathered and are a source of light on the question. In Great Britain the results of one canvass yielded the fact that ten bottle-fed children die to one that is breast-fed. In Norway, where breast-feeding is the custom, 10 die in their first year out of every 100 born. In Wurtemberg, where bottle-feeding is the custom, 35 out of every 100 born perish during their first year. In a registered area of the United States, covering a population of 33,000,000, 545,000 people died of all diseases in 1905. Of this number 105,000, or about one-fifth, were children in their first year of life. Forty thousand, or over one-third, of these infant perished of diarrheal diseases. In Chicago, during August, 1908, 863 babies died, principally of summer complaint. August seems to be the fatal month for young children. It is during this month that the bacterial content of milk is highest.

It was evidently never intended for milk to come into contact with the outside world. When obtained in accordance with nature's design, from a healthy mother, it does not become contaminated to any extent by bacteria nor their products. Such milk is wholesome, and is in striking contrast to the germ-laden stuff so often fed.

If bottle-feeding is resorted to, the milk, as has been already stated, should contain not over 10,000 bacteria per cubic centimeter. According to such a standard, but 18 out of the 114 samples listed could serve for such a purpose. Fourteen of the samples, moreover, were obtained during the cooler weather of October. Taking as a basis Park's limit of 100,000 for good milk, only about 36 per cent. of the dairies tabulated were delivering a product that could be called good. Boston's limit of 500,000 is one adapted to the needs

of the large city to which milk is shipped from considerable distances. Yet if 500,000 had been the limit in force in Kansas when the tests were made 39 per cent. would have been selling milk unlawfully.

Kansas has at the present time no city of over 100,000 population. If standards of eastern cities can be taken as criteria, along with the recommendations of many bacteriologists of repute, then no Kansas dairyman ought to sell milk having over 50,000 bacteria per cubic centimeter.

CREAM.

| CITY. | Sample number. | Date, 1908. | Number of bacteria per cubic centimeter. |
|-----------------------|----------------|-------------|------------------------------------------|
| Kansas City, Kan..... | 1 | Aug. 5 | 38,000,000 |
| " " | 2 | " 5 | 66,000,000 |
| " " | 3 | " 5 | 3,480,000 |
| Topeka..... | 4 | Jul. 29 | 3,150,000 |
| Wichita..... | 5 | Aug. 20 | 65,000,000 |
| " " | 6 | " 20 | 18,500,000 |
| Hutchinson..... | 7 | " 25 | 580,000 |
| Coffeyville..... | 8 | " 11 | 115,000,000 |
| " " | 9 | " 11 | 307,000,000 |
| " " | 10 | " 12 | 24,000,000 |
| Independence..... | 11 | " 13 | Under 10,000* |
| Pittsburg..... | 12 | Sep. 16 | 200,000 |
| Fort Scott..... | 13 | " 17 | 73,000,000 |
| " " | 14 | " 18 | 4,420,000 |
| Emporia..... | 15 | " 25 | 111,000,000 |
| " " | 16 | " 25 | 4,310,000 |
| Lawrence..... | 17 | " 15 | 90,000 |
| " " | 18 | " 15 | 50,000 |
| Leavenworth..... | 19 | Oct. 2 | 2,260,000 |
| " " | 20 | " 2 | 2,040,000 |
| " " | 21 | " 3 | 2,000,000 |
| Atchison..... | 22 | " 9 | 6,980,000 |
| " " | 23 | " 9 | 50,000 |

* Pasteurized.

In fresh milk the fat is distributed through the serum in the form of microscopic droplets, forming an emulsion. Being lighter than the serum, the droplets slowly rise, dragging or pushing with them in their upward journey many of the bacteria contained in the milk. For this reason cream contains many more organisms per cubic centimeter than the whole milk. It does not have the economic importance that milk has, for the reason that its use is limited, and it is not fed to infants.

It was anticipated that cream would contain many more bacteria than the milk sampled, and the tests confirmed the expectation. The average number of organisms of the samples listed in the table is 36,800,000 per cubic centimeter, against 4,575,000, the average for milk. While cream should have the higher count, there is really no more excuse for excessive numbers in one case than in the other.

Milk which is old, dirty and warm will itself carry large numbers of organisms. Cream from such milk will be no better.

ICE-CREAM.

| City. | Sample Number. | Date, 1908. | Numbers of bacteria per cubic centimeter. |
|-------------------|----------------|-------------|-------------------------------------------|
| Kansas City, Kan. | 1 | Aug. 4 | 3,000,000 |
| " " | 2 | " 4 | 22,000,000 |
| " " | 3 | " 4 | 108,000,000 |
| " " | 4 | " 5 | 22,000,000 |
| Topeka | 5 | Jul. 29 | 28,000,000 |
| " " | 6 | " 28 | 218,000,000 |
| " " | 7 | " 30 | 49,000,000 |
| " " | 8 | " 28 | 13,000,000 |
| " " | 9 | " 30 | 44,000,000 |
| " " | 10 | " 29 | 76,000,000 |
| Wichita | 11 | Aug. 20 | 210,000,000 |
| " " | 12 | " 20 | 184,000,000 |
| " " | 13 | " 21 | 184,000,000 |
| Hutchinson | 14 | " 25 | 29,000,000 |
| " " | 15 | " 25 | 15,000,000 |
| " " | 16 | " 5 | 2,680,000 |
| Coffeyville | 17 | " 11 | 14,000,000 |
| " " | 18 | " 11 | 9,350,000 |
| Independence | 19 | " 18 | 15,000,000 |
| " " | 20 | " 18 | 15,000,000 |
| " " | 21 | " 18 | 8,000,000 |
| Pittsburg | 22 | Sep. 16 | 32,000,000 |
| " " | 23 | " 16 | 6,290,000 |
| Fort Scott | 24 | " 17 | 5,000,000 |
| " " | 25 | " 17 | 44,000,000 |
| Emporia | 26 | " 25 | 7,010,000 |
| " " | 27 | " 25 | 26,000,000 |
| " " | 28 | " 25 | 3,350,000 |
| Lawrence | 29 | Oct. 23 | 168,000,000 |
| " " | 30 | " 23 | 31,000,000 |
| " " | 31 | " 23 | 111,000 |
| Leavenworth | 32 | " 2 | 12,810,000 |
| " " | 33 | " 3 | 5,080,000 |
| Atchison | 34 | " 10 | 800,000 |
| " " | 35 | " 10 | 58,000,000 |

Ice-cream made from cream will partake of its characteristics. If the one is fresh and clean, with a small bacterial content, the other is very likely to be so too. Freezing cream does not kill the contained organisms. There is, in fact, an increase in their number after several days' storage of the frozen product. While statistics are not at hand for proof, it is probable that more cream is consumed in the form of some frozen dainty than is used in the ordinary form. Ice-cream is not fed to infants, but it is often prescribed by physicians for invalids and convalescents. Healthy adults can generally eat it with no apparent injury, but there are exceptions. The presence of a certain kind of micro-organism in large numbers makes ice-cream disagree with some people, causing nausea, cramps, vomiting, pain in the abdominal parts and diarrhea. These are the symptoms of ptomaine poisoning.

It will be seen from the table that the counts are extremely high, higher even than those of cream, since the average is 49,280,000 bacteria per cubic centimeter, against 36,800,000 for

cream. No reason can be assigned for the excessive number of organisms in ice-cream. It is made of cream that has been derived from old or dirty milk, or it has been stored too long.

Ice-cream is frequently made in places where dirt and filth abound, such as cellars, and sheds. This fact may account for some of the contamination, but it does not account for all, and probably not for most of it. It may happen that a manufacturer uses extraordinary precautions in maintaining cleanliness in his establishment, and yet sends out an ice-cream with a bacterial count in the millions. Such an instance is brought to public notice by Doctor Wiley, of the Bureau of Chemistry, at Washington. According to his account, the employees engaged by a certain manufacturer were required to be clean personally. They took a bath and changed their clothing before beginning work each day. The premises were kept in sanitary condition and all utensils were thoroughly cleaned and sterilized before using. In spite of such care the number of bacteria in the output in three samples were respectively 6,535,000, 20,550,000 and 33,120,000 per cubic centimeter.

It is apparent that the condition of the cream when it is received has more to do with the character of the ice-cream than the surroundings attending its manufacture, important as these are. It is safe to say that, in general, the early conditions incident to a milk supply materially affects the character of the products subsequently derived from it. The first responsibility doubtless rests with the dairyman. The ice-cream manufacturer's responsibility ends when he accepts only pure, fresh, sanitary cream, uses pure, wholesome materials in connection with it, and insists on his employees and his premises being scrupulously clean.

METHODS.

Milk.—Milk was tested for temperature by means of a sterile thermometer inserted for at least one minute at the time the sample was taken. The outside temperature was taken directly before or after that of the milk. Dilutions were made of 1 : 100, 1 : 10,000, 1 : 1,000,000, sterile pipettes being used for each transfer. The inoculated water blanks were shaken at least twenty-five times before plating. Three plates each of the second and third dilutions were made, lactose agar being employed as the medium. The plates were incubated at room temperature, as it was found impracticable to carry an incubator on trips. Colonies were counted, not estimated. The average of the three plates of the most favorable dilution was taken as representing the estimate of any particular sample.

Cream.—Cream was treated in the same way as milk.

Ice-cream.—Ice-cream was purchased in the usual pasteboard cartons and brought directly to the laboratory. The top portion of the ice-cream was scraped aside and a portion removed from the interior by means of a sterile spoon. This was placed in a sterile petri dish to melt. The remaining steps were the same as in milk.

Milk Inspections.

Written for the BULLETIN by GEO. M. WHITAKER, A. M., Sc. D., Assistant in Market Milk Investigations, Dairy Division, U. S. Department of Agriculture.

Dirty milk, milk produced under improper conditions, and milk badly cared for, will have an excessive amount of bacteria. Such milk may be a menace to health, particularly to infants and invalids. The cleaner the methods of producing and handling milk, the quicker it is cooled, and the more constantly it is kept cool, the fewer the bacteria. When milk is found with excessive amounts of bacteria—though we may know nothing of its history—we may assert with confidence that there have been bad conditions somewhere in the life of that milk.

Laws against adulterating milk have been in existence for many years in the older cities of the country; and the mention of milk inspection brings to many persons the mental picture of an officer taking samples from the milkman's wagon for tests to ascertain if there is any added water.

Increasing knowledge of bacteriology has shown the dangers of dirty milk, and intelligent people everywhere are asking for more milk laws; that the milk supply of their city shall be examined for that which may poison the baby, as well as for added water. Many cities already have legislation of this kind, and others are agitating in the same direction; so that the modern milk inspector is coming to have more duties than his predecessor, and his newer duties are the most important—for adding pure water to pure milk is a small offense as compared with producing and selling unwholesome milk. The modern milk inspection has also a selfish benefit to the milkman, for the souring of milk is caused by bacteria, and the cleaner his product the less his losses from souring.

The modern sanitary milk inspection is of two kinds: First, the inspector may take samples of milk and test them for bacteria; then if the number is excessive the milk from that dealer may be excluded from the market till better conditions at the dairy reduce the number of bacteria. Second, the inspector may examine the

cows, stables, milk-rooms, and methods of handling milk; and when he finds a very bad condition the milk from that dairy may be excluded from the market as above. The latter system is used in smaller cities which want clean milk and do not want to incur the expense of a bacteriological laboratory. Some cities have both systems, with a bacteriological limit beyond which merchantable milk must not go.

One of the best systems of actual inspection of stables, etc., is with a score-card in hand, on which are printed some fifty to sixty of the more important features in milk production, with a certain number of points assigned to each. The inspector puts down his rating—his judgment expressed mathematically—against each one of these items, and the total gives the score of the dairy. This system is educational and helps the milk producer; it is preëminently fair and impartial; it tends to remove the irritation which sometimes exists between inspector and milk dealer; it is open and aboveboard; the mathematical rating is a more accurate expression than the vague and elastic words which otherwise must be used; it stimulates improvement better than any other system.

In a general way the two methods of doing inspection work are in accord and one confirms the other. When the score-card is used low scores will average to go with high counts of bacteria; but in particular cases there may be apparent differences. There are many ways in which bacteria may get into milk—from dirty cows, the air of dirty barns, dirty milk-rooms, dirty pails and strainers, dirty milkers, and improper cooling; and no score-card can be devised which will measure the exact number of bacteria which may get into milk by reason of each imperfection.

On invitation of State Dairy Inspector Wilson I have been inspecting some dairies in Kansas, using the score-card and giving them a rating. I happened to be in Wichita a few days after a visit of the agent of the Board of Health. Neither knew of the work of the other until it was a matter of record. My average score of eight dairies was 47, perfect being 100. This is rather low and means average unsatisfactory conditions. The average number of bacteria in milk from the same eight dairies a week before was seven million per cubic centimeter. The Boston board of health prohibits the sale of milk with over 500,000 bacteria. These dairies averaged fourteen times more than the Boston limit.

Both methods of inspection tell the same story, of need of great improvement and stricter laws. But when we compare the two records of individual dairies there are some striking exceptions.

The dairy which received the worst score was best from the bacteriological standpoint. This was a dairy once doing a large business but which has dwindled down to two cows, the proprietor being practically out of business. Hens were running freely in and out of the milk-room, and I found some fresh hen manure on the bottling-table near an empty bottle. (I took a photograph of it.) The generally careless appearance of the premises would make it probable that were several samples taken the bacteria would average high. But a sample of milk sold the previous week happened to have only a small amount of bacteria. Possibly it was so fresh that the bacteria had not had time to multiply much. Another dairy had very bad conditions; the milk-room opened directly from the barn, and flies were abundant. I counted twenty-five dead flies in the strainer-cloth over the bottling-machine; and the milk had considerable sediment on the day I was there. But the milk is cooled with considerable promptness, and then bottled and delivered at once. Milk taken from that dairy the previous week had 290,000 bacteria per cubic centimeter. Milk from one of the worst dairies visited in that city had 1,860,000 bacteria per cubic centimeter—a result that did not surprise me. Another dairy was so bad that I took three photographs. The stable was dark and not overclean; the milk-room opened directly from the stable by doors on two sides; this room was filthy, and a dirty man was washing (?) cans in a slovenly way in lukewarm water; while the cows could not get into the barn without going to their knees in mire. The place was so bad that the milk inspector issued peremptory orders for specified improvements. The bacteria in the milk from this dairy were 49,000,000. Dirty as the place was I should hardly expect quite such an amount; possibly the milk which was taken for examination was so old that the bacteria absorbed at the dairy had doubled two or three times.

It should be added that none of my inspections could be made at milking-time and the score for methods of milking had to be made after questioning the proprietor or hired man. Could I have seen the actual process the score might have followed even more nearly the count of bacteria; but as it was the averages confirmed each other, and possible explanations for the seeming exceptions were not difficult to find.

Now and then I hear of some one attempting to belittle bacteriological examinations of milk by saying that there are good bacteria as well as bad bacteria, and that a score of typhoid bacteria are worse than millions of lactic acid bacteria. It is true that

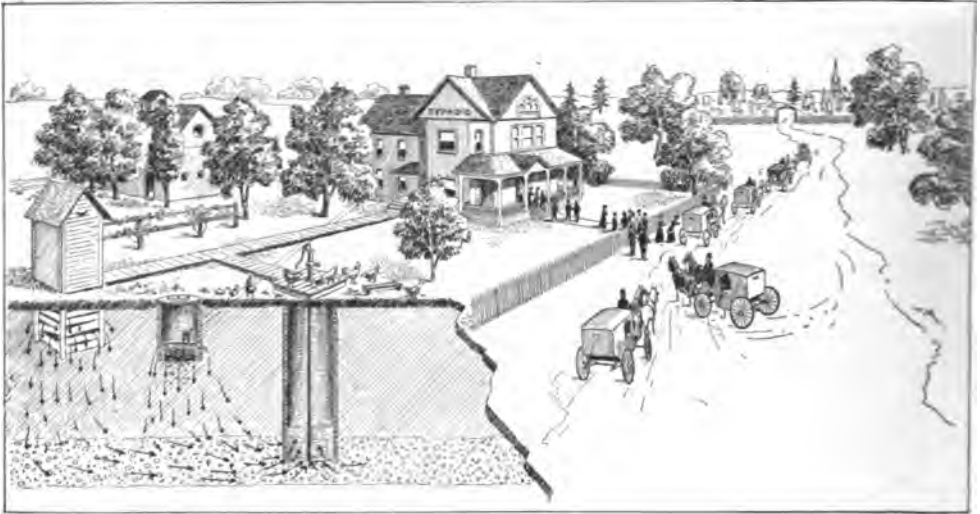
some kinds of bacteria are "good"—or desirable—in some places. Cream cannot be ripened for butter-making without some of the "good" bacteria. Cheese-making calls for some of these "good" bacteria. But we question whether there are any "good" bacteria in market milk. Sour milk and buttermilk have their uses, but the purchaser of sweet milk does not want to have sour milk delivered to him. Bacteria which are "good" in some places are out of place—that is, are weed bacteria—in market milk. Furthermore, when milk contains large numbers of bacteria we usually find many of the undesirable kind in close association with the others. Consequently there is no reason to discredit—or oppose—the inspection of milk by counting bacteria.

Professor Conn has been quoted by the critics of bacterial inspection because he says: "The ordinary examination of milk which condemns milk containing more than a certain number of bacteria fails to reach the desired end." But Professor Conn also says in another place: "The dirt which gets into milk is a very important source of organisms which are likely to produce trouble. . . . The presence of dirt means infection with bacteria, and in many cases with types of bacteria that are emphatically mischievous. . . . Milk which contains a large amount of dirt must be far inferior in quality to a clean milk, since it will contain more bacteria. . . . Clean milk will keep better and it will be less liable to contain disease germs. . . . Nearly all dairymen to-day have come to recognize the desirability of keeping the number of bacteria as small as possible."

House Wastes.

The degree of a city's cleanliness is usually an index of the average cleanliness of the families that comprise such a city and an outward expression of their interest in municipal sanitation. In most of the difficulties surrounding official effort to keep a city clean the individual household is to blame. It is said that ancient Rome was a model of cleanliness, which was accomplished by each householder having his own door-yard swept daily. The cleanliness must begin at home, and be assured that no amount of governmental energy or financial expenditure can successfully overcome family indifference and filthiness.

The accumulation of household waste in the cellar, yard, alley, or about the premises of the family is evidence not only of unsani-

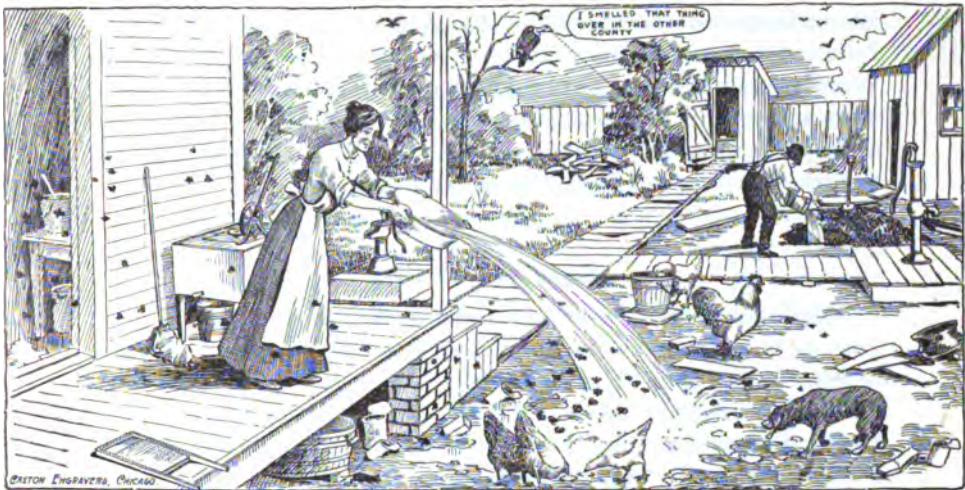


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tary housekeeping and a lack of appreciation of the responsibility of the individual in municipal cleanliness, but is a real menace to the health of that family and those who surround them.

The campaign against the fly is essentially a campaign of cleanliness, but it must necessarily fail if unsupported by the individual. As the campaign against yellow fever and malaria has converged into one against the mosquito, that of the plague into one of how to most successfully destroy rats, the campaign of bovine tuberculosis proving the importance of a clean milk supply, so the study of the cause and dissemination of typhoid fever and other infectious diseases of the alimentary canal has shown us the large part the fly plays in the dissemination of these diseases, and emphasizes the importance of the proper disposal of sewage and household waste.

The chief breeding-place of the house-fly is horse manure, but recent investigators have found the larvæ of the fly in old fermenting straw, pig-pens, paper, rags, and other refuse mixed with human excreta. Decaying vegetables, old straw mattresses, rotten sacks in a state of fermentation, also give them sustenance. The presence of a large number of flies is conclusive evidence of an accumulation of refuse near by, and a living, annoying, menacing testimonial of the unsanitary habits of some family in that community. The time is coming when the unkept yard, stable, cellar



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and closets, with their complement of flies, will be regarded as unsanitary and disreputable as dirty hands and face. *So mote it be!*

In suburban and rural districts, when the water-supply is derived from the spring or well, the proper disposal of house waste and night-soil is essential for the protection of such water-supply, as well as the prevention of the fly nuisance. There can be no question but that much of the typhoid fever in the country districts can be charged to the custom of locating the privies at points of convenience, regardless of their relation to well or spring, and the usual custom of throwing the night urine upon the ground near the well, rinsing the vessel with water from the pump because of the convenience of the supply. The accompanying cut illustrates in a graphic manner the possibilities of such practices.

Doubtless typhoid fever will continue to be known as a "rural disease" until such time as a due regard shall be exercised in the proper location and safeguarding of the water-supply and the sanitary disposal of house sewage and waste. During the summer of 1907 an epidemic of typhoid fever (thirty-two cases) in this state was caused by the pollution of a milk-supply, through the dangerous and filthy practice of throwing the night urine out in the yard to infect the soil, and that in turn to be blown into the milk-cans that were placed in the yard to sun and air. A walking case of typhoid among the milkers, who also delivered the milk, furnished the necessary germs to precipitate the epidemic. There seems to

be evidence for the belief that the epidemic of typhoid fever that followed a marriage dinner in southeastern Kansas in 1905—about seventy cases, with a heavy mortality—was the result of infected milk and cream. Thus it is apparent that the safety of the city is closely related to the sanitary conditions of the farm and is of vital interest to the urban as well as the rural population.

Eggs and Poultry.

Eggs rank next to bread, meat and milk in importance as a diet, both as to quantity and value and as to wholesomeness and nutritiousness as a food. The egg is one of the most digestible of foods, and enters into the dietary of both old and young, sick and well, rich and poor, and thus, with bread, may be classed as a universal food. It must be apparent, therefore, that the whole people are concerned in the physical condition in which this great staple is placed upon the market, and are demanding that certain customs and practices that have hitherto prevailed shall cease, that the consumer may be assured of a sound, untainted product when he breaks it over his toast for his morning meal. We must admit at the beginning that there will always be a small per cent. of rotten or tainted eggs brought to the market by the most careful and honest farmer or egg producer, as that seems to be inevitable in the nature of things; but there are in every community a few producers who wilfully and with "malice aforethought" bring everything to market that is or has been an egg, regardless of age or service in the incubator, for in the vicious and temptation-to-do-evil case-count system of buying, everything that has a shell around it goes, for such eggs are of equal value to fresh ones in the count—that is, it used to be so, but right here the food and drugs law steps in and declares, in section 7, subdivision 6 under "Foods": "If it consist in whole or in part of a filthy, decomposed, tainted or putrid animal or vegetable substance," etc., it shall be deemed to be adulterated. Section 2 provides that any person who shall sell, keep for sale or offer for sale such adulterated products is guilty of a misdemeanor. It should be noted that the law makes no exception in the case of rotten or tainted eggs, nor takes cognizance of the ancient custom of "case count" by which "rots" are accepted by mutual agreement between producer and seller. *Not at all.* The law plainly declares that it is unlawful to sell rotten or tainted eggs, and no subtle juggling with "custom," or mutual understanding,

or assumed innocence, or even outright notice, will legalize the sale of a case of rotten eggs.

Since improved methods of refrigeration have been discovered immense quantities of spring eggs have been put in cold storage to be sold during the winter months when eggs are scarce and high in price. It has been the almost universal practice to sell such eggs to the consumer as fresh eggs, much to the annoyance and disgust of those who can recognize the difference, which most people can, for even the best of such storage products have a characteristic "twang" and a strong odor when first broken that readily distinguishes them from the fresh eggs.

Experiments conducted by the United States Department of Agriculture warrant the conclusion that eggs under the most favorable condition of cold storage gradually deteriorate, and the longer in storage and the older the eggs the greater the deterioration. Examination shows that the albumen in some instances clung to the shell-membrane; that the size of the air-chamber was often increased to one-third the size of the egg, due to the loss of the watery portions by evaporation; that minute crystals were present in the albumen, and large rosette crystals were always found in the yolks of such eggs, all of which are indicative of changes going on in the egg structure and marking the progress of deterioration.

One of the fundamental principles of the food and drugs law is to prevent fraud in the sale of food and drug products. Section 8, subdivision first under "Foods," declares that if an article is "offered for sale under the distinctive name of another article," it shall be a violation of the law, and subdivision second reads that "if it is labeled or branded so as to deceive or mislead the purchaser" it constitutes misbranding.

The department of foods and drugs holds that the sale of cold-storage eggs as or for fresh eggs is in violation of the law, and they have given notice that all dealers found violating the law in this respect shall have to answer to the courts. It might be well to add that the federal government has passed on this question twice recently, and their decision was in accordance with the facts above stated.

POULTRY.

For a number of years a fierce controversy has been waged between cold-storage men and sanitarians and physicians on the question whether or not the refrigeration of poultry, game or fish with the entrails undrawn was accompanied by changes in such products which were detrimental to the health of the consumer.

A preponderance of the testimony offered seems to decide the question in the affirmative, and when the usual commercial customs of the sale at retail of such products are taken into consideration, there remains no reasonable doubt but that such practice is fraught with very great danger. It is, however, unnecessary to discuss this question in Kansas, as chapter 187 of the Laws of 1907 specifically prohibits the sale of refrigerated undrawn game or poultry, and provides a penalty of not less than fifty dollars for each offense. Section 7, subdivision sixth under "Foods," of the food and drugs law, declares that the sale of "any portion of an animal unfit for food, whether manufactured or not," is prohibited; as the entrails are a "portion of the animal unfit for food" it would seem to come under the prohibited class that are unsalable, and the attorney-general has given an opinion to that effect.

There can be no question but that immediately upon the death of the animal the contents of the crop and entrails of poultry or game undergo rapid decomposition, and the gases and ptomaines soon force their way into and are absorbed by the tissues of the fowl, producing an unwholesome condition of the flesh which, if long enough continued, is actually poisonous. Regulation 33 provides that perishable products shall be protected from contamination by flies or dust, and thus the practice of hanging fowls and rabbits outside for display is prohibited. We are of the opinion that these sanitary requirements are of vastly more importance than any other provision of the law, for they have to do directly with the very health and life of the people, and notice is herewith given that a rigid enforcement of these sanitary rules will be required from this time forward.

The United States versus Muco-solvent.

On the 26th day of October, the chief food and drug inspector of Kansas, acting under a commission issued by the Secretary of Agriculture as federal inspector, filed complaint with the United States District Attorney, at Topeka, under the national food and drugs act of June 30, 1906, against the patent medicine known as Muco-solvent; whereupon, on the 27th day of October the United States marshal for the district of Kansas seized the following-described property, to wit, forty-one boxes of Muco-solvent, each labeled as follows: "Muco-solvent cures croup, whooping-cough, diphtheria, all throat troubles, and catarrhal disorders."

Previous to the time set for hearing the case, the Muco-solvent

Company acknowledged that the national food and drugs law had been violated in that their product was misbranded, and upon failure to appear the United States district court made the following decree:

IN THE DISTRICT COURT OF THE UNITED STATES,
DISTRICT OF KANSAS, FIRST DIVISION.

THE UNITED STATES, *Plaintiff*,

vs.

FORTY-ONE BOXES OF MUCO-SOLVENT, *Defendant*.

DECREE.

Now, on this 24 day of November, 1908, this cause comes on for hearing, and the libellant being present by J. S. West, assistant United States attorney for the district of Kansas, and the Hessig-Ellis Drug Company, of Memphis, Tenn., a corporation, appearing not, but having made default, and F. A. Gatlin, doing business as the Gatlin Drug Company, in whose possession said drugs were found, not appearing, and having made no claim whatever to said goods, and having made default, and it appearing that all the allegations of the libel of information herein are true, and that the property seized herein was and is mislabeled and misbranded as charged in said libel of information, and it further appearing that the said Hessig-Ellis Drug Company, a corporation, of Memphis, Tenn., and the Muco-solvent Company, manufacturer, and F. A. Gatlin, doing business as the Gatlin Drug Company, the manufacturer and shipper and consignee respectively of said goods, have had full, complete, actual notice of the proceedings heretofore had herein, it is now by the court considered, ordered and decreed that the forty-one boxes of Muco-solvent seized herein be forthwith destroyed by the marshal of this court.

JOHN C. POLLOCK, *Judge*.

The Kansas department of food and drugs desires to give notice of this action and the official information to dealers in this state, that in accordance with section 9 of the law, and regulation 7 of the rules and regulations, all guarantees given by dealers under the Kansas food and drugs law on this product are hereby terminated, and that dealers will be held responsible for the sale of these preparations until these products have been relabeled to comply with the national and Kansas food and drugs law. Dealers should immediately apply to the manufacturers for new cartons and labels, which it is understood will be furnished at the earliest possible moment to all those who have these products in stock and shall apply for the new dressings.

Echoes from the International Congress on Tuberculosis.

(Continued from last month.)

The congress was held in the unfinished National Museum building, which detracted materially from the comfort of the delegates and the beauty and order of exhibits. Naturally the surroundings were in confusion and disorder, but this was to be expected in a half-finished building. Congress has millions to erect splendid public buildings in country towns for the "constituency," but no suitable building for housing this great congress of scientists, specialists and sanitarians, who are undertaking the most stupendous and humane task of the centuries.

But even this might have been overlooked, and the American delegates have been able to "save their face," were it not for the fact that in order to reach the entrance all delegates had to go through the national capital's disgrace, known as the Washington market. Here was an exhibit that was not intended for the foreign delegate's eye and nose. Here was the "limit" of foul odors, filth and flies. Ducks and pigs, geese and calves, chickens and oysters, fruits and fish, meats and flies were mixed with dirty marketers in one confusing mass of odors and trash. Ugh! it was fierce. A fine ensemble to an International Congress on Tuberculosis—probably used to demonstrate one of the methods of infection.

Washingtonians and others have wondered why their typhoid rate has not been materially reduced since the installation of their splendid new water purification. Well, if you will visit the Washington market you will cease to wonder. Just as the writer stopped at a meat-stall one day to look at the swarms of flies on the meats and vegetables, the butcher was selling a live chicken to a customer; the next one to be served wanted some beef, and there was some controversy as to its tenderness. This was demonstrated by the butcher punching his unwashed fingers through the steak several times, and the customer was convinced. Bah! on the national capital's disgrace.

The need of stringent child-labor and factory-inspection laws and of their strict enforcement was brought out by a number of papers read in section 5 on Tuesday, and as these facts were based on careful investigation by the most competent observers in this country they are entitled to the distinction of authoritative utterances on the great problem of the industrial trades and their rela-

tion to the public health. A brief synopsis of these excellent papers follows:

THE ECONOMIC ASPECTS OF TUBERCULOSIS.

By THOMAS W. B. CRAFER, A.M., LL.B., Fellow in Political Economy, Harvard, Boston.

1. The death-rate from tuberculosis for the native-born population of the city is much lower than that for the foreign-born. This results from the fact that the immigrants, having but small resources, are compelled to betake themselves to the poorer residential quarters of the city, where the buildings are frequently infected with tuberculosis.

2. The resources of families that had one or more members affected with tuberculosis, during the period covered by the investigation, were such that in but few cases could ordinary medical attendance be procured for the sick, much less the benefits of sanatorium treatment.

3. The following classification of homes in which persons had died of tuberculosis, during the period covered by the investigation, was made with reference to access to sunlight and pure air, number of houses to the block, size and condition of premises, proximity to industries, general sanitation and environment: Excellent, 22; good, 383; poor, 297; very bad, 200.

4. The occupations which showed the highest death-rates were those of unskilled laborers, factory employees, domestics and shop-clerks, in the order named.

5. The following statistics are significant as throwing some light on the baneful effects of child labor in the industries. Of 167 housewives who died of tuberculosis during the period covered by the investigation, and who had not worked in industries nor as domestics prior to marriage, the average age at death was 34.9 years; whereas the average age at death of 48 housewives who had worked in industries or as domestics prior to marriage was but 27 years.

The point to be noted in this connection is not that the industries of Milwaukee are less healthful than similar industries in other cities, but that girls of tender years are forced into factories, owing to economic conditions of their families.

6. Although tuberculosis is widely distributed in the city of Milwaukee, it is most fatal in the congested wards. The average density of population per acre for the whole city is less than 22, but in certain sections of the more congested wards where tuberculosis abounds the density of population per acre is over 100.

7. It is a very conservative estimate that 40 per cent. of all the families in Milwaukee having tuberculous members are absolutely incapable of affording the proper conditions of light, pure air, good housing, freedom from worry, nourishing food and competent medical attendance for a successful campaign against the disease.

TUBERCULOSIS AS AN INDUSTRIAL DISEASE.

By FREDERICK L. HOFFMAN, Statistician of the Prudential Insurance Company.

Active efforts to reduce the mortality from tuberculosis require its recognition as an occupation disease and the necessary differentiation of fibroid phthisis and general tuberculosis, of which the former may be regarded as a specific trade disease. A statistical presentation is made of the mortality

from consumption in the United States among the different elements of the population, with special reference to age and sex, including a table of the proportionate mortality from consumption among males, by divisional periods of life, as a standard of comparison with the corresponding mortality from this disease in thirty carefully selected dust-exposing occupations. The occupation mortality data considered are derived from the heretofore unpublished records of the industrial experience of the Prudential Insurance Company of America, for the decade ending with 1906. The statistical data are illustrated by a series of colored graphics designed for use in the traveling exhibit of the national association. The occupations are grouped according to the kind of dust exposure into metallic, mineral, vegetable fiber, animal and mixed fiber, general organic, and municipal or street dust. Each occupation is considered in detail at sufficient length to emphasize the excessive mortality from consumption in particular trades, by divisional periods of life, and brought in contrast with the normal mortality from consumption in the general population. Appended to the discussion are numerous tables presenting the actual facts of insurance experience upon which the conclusions are made to rest. In conclusion, the economic aspects of the subject are emphasized as a present-day labor question involving the more or less needless annual loss of some 77,000 lives of wage-earners of the United States from this particular disease. The present consumption death-rate of males in gainful occupations is stated as 2.4 per 1000 of population, which in the speaker's opinion, by rational methods of prevention and cure, can be reduced to 1.5, which, if attained, would be equivalent to a yearly saving of nearly 30,000 useful lives. Since the average age at death of persons dying from consumption is 37.4 years against 52.8 years in the mortality from all causes, there would be an expected gain of at least 15.4 years of life for every person whose death from consumption is prevented by rational conditions of industrial life. Such a saving in life would have an equivalent financial value of nearly \$90,000,000. The speaker arrives at the conclusion that "with such results clearly within the range of practical attainment, nothing within reason should be left undone as a nation, state, or individual, to prevent that needless but now enormous loss of human life from consumption in American industry."

THE CASH VALUE OF FACTORY VENTILATION.

By PROF. C. E. A. WINSLOW, Massachusetts.

Prof. C. E. A. Winslow, of the Massachusetts Institute of Technology, reports a study of the effect of improved ventilation upon the efficiency of factory operatives, carried out under the auspices of the research department of the Boston School for Social Workers. The plan adopted was to find cases in which marked improvements in ventilation had been made, without other important changes, and to study statistics of attendance before and after. It proved difficult to find cases of this sort, where good statistics were available, and where coincident changes did not throw suspicion upon the results. One striking instance, however, was reported.

The toll-room of the New England Telephone and Telegraph Company at Cambridge, Mass., is a long, narrow room, with windows at front and back. In winter, when the windows could not be opened, the air was bad. In the spring of 1907 a duct was built along the ceiling, opening to the street at

the front and discharging air into the room by inch and a quarter holes. Fans were placed in the rear wall to exhaust the vitiated air of the room. The entire cost of the apparatus was seventy-five dollars.

A marked improvement in comfort and general condition of the operators followed this change. In the winter of 1907-'08 the average percentage of absences among the sixty-odd girls was cut in half. For the first three months of 1906, 4.9 per cent. of the force were absent, on the average; in 1907, 4.5 per cent., and in 1908, only 1.9 per cent. In the summer of 1908, too, the percentage of absence was much lower than in previous years, suggesting a gradual improvement in general vital condition. In the three winter months alone the saving amounted to 1.8 the entire time of one operator, equivalent to a profit of \$195 for the company on its capital investment of \$75.

This is a single case and in some respects an exceptional one, but it emphasizes the fact that improved sanitary conditions do bring a tangible return, sometimes a large one in proportion to their cost.

LEGITIMATE EXERCISE OF POLICE POWER FOR THE PROTECTION OF HEALTH.

By DR. HENRY B. FAVILL, Chicago.

1. Measures of regulation of industrial affairs in behalf of the laborers inevitably carry with them much of the controversy between capital and labor and are difficult to institute.

2. It is becoming generally accepted that health is the essential factor in productiveness and prosperity, and hence in the advancement of civilization. It follows, therefore, that the state in pursuit of its primary function must take cognizance of fundamental necessities.

3. The conditions under which labor shall be performed as related to health become matters of primary interest to the state, and upon that basis should be the subjects of decisive, mandatory legislation.

4. Inasmuch as all legislation is subject to judicial review as to what is constitutional, regard should be paid to the trend of judicial opinion. Thus far three things appear as important: (a) That the subject should be clearly a health proposition; (b) that it be general and not class legislation; (c) that the contention be supported by reliable data.

5. Tuberculosis is the most imperative subject before us. Data upon this subject are meager and must be acquired through systematic research. To accomplish this, much "police" cooperation will be necessary.

6. Broadly speaking, the re-education of the masses as to the value of fresh air and the practicability of being subjected to it is a colossal undertaking, but of fundamental importance.

7. The importance of fresh air as a physiologic stimulus, leading to individual vigor, must be emphasized. Its value as an atmospheric purifier is important though decidedly secondary.

8. The readjustment of industrial conditions to an adequate supply and distribution of fresh air is the one great thing to accomplish. The difficulties are so great as to be appalling. The necessities are so clear as to be imperative.

9. Sanitarians and sociologists must combine to accomplish this reform. As it now appears, nothing short of the broadest exercise of police jurisdiction will be effective. Subordinate health law naturally follows.

PULMONARY TUBERCULOSIS AMONG PRINTERS.

By DR. JAMES ALEXANDER MILLER, New York.

Thorough physical examinations were made on 203 printers who volunteered for the examination.

The main point in the investigation was to determine the extent of pulmonary tuberculosis, but all other diseases were considered both in the history and physical examination.

It was found that almost all of the men were young, native-born Americans, earning good wages, and living under good conditions; the majority of them used alcohol and tobacco; 20 per cent. of all used them in excess, and about 20 per cent. were total abstainers.

One hundred and twenty-four men complained of unfavorable conditions in the shop, designated as follows: Poor ventilation, 49; metal fumes from unpiped machines, 27; unsanitary water-closets, 19; insufficient, or absence of, cuspidors, 14; dirty walls and ceilings, 8; metal dust, 5; overcrowded rooms, 7; poor light, 5.

The medical history and examination showed that catarrh of the upper air-passages was very frequent. Also dry pleurisy, bronchitis and pulmonary tuberculosis. Pulmonary tuberculosis was present in 34 cases, or 17 per cent. of the whole number.

Disturbances of the digestion were also extremely frequent, and to a less degree neurasthenia and rheumatic conditions.

No cases of lead-poisoning were found.

CONCLUSION.

Pulmonary tuberculosis is very prevalent among printers, and is largely due: (1) To unfavorable shop conditions, especially poor ventilation, overcrowding, dust and dirt, promiscuous spitting and poor lighting. (2) To the irregular habits of the printers themselves, especially alcoholism, careless habits of eating, needless exposure to drafts, and insufficient outdoor exercise.

(To be continued next month).

Every patriotic citizen who is interested in the problem of saving the 50,000 Kansans of this generation who are doomed to die of tuberculosis if the present death-rate continues, is urged to show such interest by joining the State Association for the Study and Prevention of Tuberculosis. If you can't be present at the initial meeting called by Governor Hoch for December 3, you can send your name and address with one dollar for the membership fee, which will be used in the great educational propaganda to be undertaken by the association. Are these Kansans worth saving? If so, will you help?

Fifth Annual Conference of Health Officers.

The fifth annual conference of county and municipal health officers with the State Board of Health will be held in Representative Hall, Topeka, Kan., December 3, 1908. The date for this meeting was arranged so as to blend the meeting of the health officers with the conference called by the governor for organizing a state-wide campaign for the study and prevention of tuberculosis. It is earnestly desired that every health officer of the state be present to lend his support and assistance in what we believe will be the most important organized movement in the interests of public health that has ever been inaugurated in this state. It is believed that attendance on these annual conferences of health officers will better equip health officers in the performance of their duties as such, aside from the fact that an interchange of opinion concerning the complex problems of sanitation is always both beneficial and entertaining. The following program has been arranged for the meeting:

PROGRAM.

December 3, 1908, Representative Hall.

- 9:30 A. M. Address, by Dr. A. B. Scott, President State Board of Health.
- 10:00 A. M. Schoolhouse Inspection and Fumigation, by Dr. G. P. Marner, County Health Officer, Marion county.
Discussion.
- 10:45 A. M. Country Slaughter-house Inspection, by Dr. A. D. Updegraff, County Health Officer, Harper county.
Discussion.
- 11:20 A. M. Question Box.—The Troubles of the County Health Officer. Conducted by Dr. S. J. Crumbine, Secretary of State Board of Health.
- 12:00 M. Recess.
- 1:30 P. M. The Value of a Wholesome Water Supply, by Prof. E. H. S. Bailey, Chemist State Board of Health.
Discussion.
- 2:00 P. M. Sewage Disposal and the Fly in their Relation to Typhoid Fever, by Prof. William C. Hoad, Sanitary and Civil Engineer State Board of Health.
Discussion.
- 2:30 P. M. The Necessity for Compulsory Reports of Typhoid Fever and Tuberculosis, by Dr. C. B. Van Horn, President Topeka Board of Health.
Discussion.
- 3:00 P. M. A Plea for the Early Recognition of Tuberculosis, by Dr. O. D. Walker, County Health Officer, Saline county.
Discussion.
- 4:00 P. M. Tuberculosis Conference with the Public. Called by Governor Hoch.

Tuberculosis Conference.

The following circular letter has been issued to the people of the state, and it is confidently expected that a large number will be present for the purpose of organizing a state society for the study and prevention of tuberculosis, and thus the Kansas campaign for the suppression of the Great White Plague be auspiciously begun:

KANSAS STATE BOARD OF HEALTH.
TOPEKA, November 18, 1908.

To the Patriotic People of Kansas:

Governor Hoch has issued a call for a conference of all who are interested in the campaign for the Study and Prevention of Tuberculosis in Kansas. When it is remembered that there are approximately 5000 cases of tuberculosis in this state at the present time, that more than 100 die of this disease every month in the year, and that if this rate of morbidity and mortality continues there will die of this scourge over 50,000 of the people now living in the state, it must appeal to every thinking patriotic person that something *must* be done, *and that quickly*, to stay the awful ravages of this preventable disease.

The State Board of Health realizes that the problem is too great for any one individual or board to successfully solve, that it is essentially a problem for the people as a whole, and without their active and cordial coöperation any plans or schemes proposed have already failed before they are begun.

It is proposed, therefore, to organize a Kansas branch of the National Association for the Study and Prevention of Tuberculosis, which will have affiliated with it the various organized forces already in existence, each one to be an arm or weapon of the central organization, which, together with individual effort, will promise much in the proposed educational propaganda, which is necessarily the chief corner-stone of the scheme of prevention.

It is confidently hoped that a large representative body of people may be present at the initial meeting in Representative Hall, Thursday, December 3, at 4:00 P. M.

S. J. CRUMBINE, M. D.,
Secretary.

Approved:

E. W. HOCH, *Governor.*

Eyes of Children Alarm State Board.

Percentage of Defective Sight in Schools Found Large by Examination.

The percentage of school children of the state who have defective eyes and ears is alarmingly large. Results of a recent examination, conducted under the direction of the State Board of Health, shows that 15.66 per cent. of the children examined have defective eyesight, and 2.7 per cent. have imperfect hearing.

The examinations upon which the results are based were made by the teachers of the schools, upon instructions given by the state

board. Preparatory to the examinations a series of lectures on the eye and ear was given by a group of St. Paul and Minneapolis specialists in the state teachers' training schools. The teachers were instructed in the means of making accurate examinations, and blanks were later furnished by the State Board of Health.

All the schools to which blanks were sent have not reported. A total of 14,403 pupils were examined, and 2256 were found to have defective vision. The percentage is 15.66. Of the defectives 135, or 6 per cent., were wearing glasses. Eight children were found to be totally blind in one eye, and one child was nearly blind in both eyes. Of the same children examined, 390 were found to have defective hearing, or 2.7 per cent. of the total number examined by their teachers. One child was found to be almost deaf and dumb. Catarrh was found to be the cause of most of the cases of defective hearing.

Warnings were issued by the teachers to the children found to have poor vision and imperfect hearing. Cards were given the children showing what their condition was, and they were urged to seek medical attention.

The reports show that many of the children have already complied with their teachers' suggestions and have been fitted with glasses, while numbers of those whose hearing was found to be unsatisfactory have begun treatment for catarrh. Second letters have been sent to the parents of children who have not been diligent in attempting to relieve the unsatisfactory conditions.

The State Board of Health has determined to make the investigation of the vision and hearing of the school children of the state a permanent feature of its work each school year.

The St. Paul Globe, March 5, 1905.

The Cowboy's Lament.

Things don't seem like they uster in this good old woolly West;
I've got a bitter feeling gnawin' here beneath my vest;
There ain't no kick on wages, but, stranger, darn the pay!
When the spring roundup is over I have got to help pitch hay.

It uster be the cowboy was most always on the roam;
He didn't see a pitchfork, and the saddle was his home;
But the game is worked some different in this dark, degenerate day,
When a fellow takes his spurs off and gets in the doggoned hay.

So jest take my chaps and lose 'em—bring the pale blue overalls—
Bring along that shirt of hick'ry—there is nothin' now that galls;
I've hocked my Cheyenne saddle, for the puncher's had his say—
There is hay seed down my collar, so come on with hay—more hay!

—ARTHUR CHAPMAN.

THANKSGIVING DAY.

BLESSED ARE THE GRATEFUL.

GRATITUDE knocks to-day at the gateway of the soul. She comes with urn and censer to receive the incense of the human heart. She lifts no voice of supplication or command, and accepts no offerings not most gladly given. And yet at every portal does she pause, and when she passes on unhonored and ignored she leaves behind not half a man. All men are debtors, and the smallest debt is greater far than finite wealth can pay, and yet no man so poor but has within his power to give immortal gifts, not less than those the richest man can bring. Then bid her welcome, this fair Gratitude, and send her on with choicest offerings. Sometimes, 'tis true, the night of tears may come, and sorrow's black-sailed barge may cast her moorings near the soul. But still the guiding star of simple faith leads ever on to quiet ports beneath the bending benediction of the sky. Sometimes misfortune's iron hand may tear away the fruit of honest toil. But sunlight smiles upon the fields again, and fields again laugh back in harvests. And blessings more than earthly plentitude enrich mankind—so wondrous great the gifts to heart and soul that mortal lips can only falter words of feeble praise and say, "Oh Lord, we thank thee."

HOMER HOCH, Marion, Kansas.

BULLETIN

OF THE

Kansas State Board of Health.

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No. 12.

DECEMBER, 1908.

VOL. IV.

SPECIAL EDITION FOR TEACHERS.

The Kansas Association for the Study and Prevention of Tuberculosis has been organized, and the state-wide campaign is on. You can help by sending in your name and address and one dollar for membership. You will then be entitled to the pamphlets on prevention and other literature issued by the association. Every dollar in fees received goes into the work of the association. Won't you help?

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VITAL STATISTICS

Reported to the Kansas Board of Health for November, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|-----------------------------------------|--------------------|----------|-------------------|----------|------------------|----------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| The State...total, November, 1907... | 88 91 | 53 54 | 73 175 | 20 36 | 309 200 | 88 27 | 287 124 | 9 7 | 291 61 | 0 0 | 14 51 | 0 0 |
| *Allen | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Anderson | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atchison | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barber | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| Barton | 1 | 1 | 0 | 0 | 6 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| Bourbon | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 15 | 0 | 0 | 0 |
| Brown | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| Butler | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chase | | | | | | | | | | | | |
| *Chautauqua | 1 | 1 | 1 | 0 | 28 | 5 | 2 | 1 | 0 | 0 | 0 | 0 |
| Cherokee | | | | | | | | | | | | |
| *Cheyenne | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Clark | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clay | | | | | | | | | | | | |
| *Cloud | 8 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coffey | | | | | | | | | | | | |
| *Comanche | 3 | 3 | 5 | 5 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Cowley | 1 | 1 | 1 | 1 | 6 | 1 | 4 | 2 | 0 | 0 | 0 | 0 |
| Crawford | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Decatur | 4 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickinson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Doniphan | | | | | | | | | | | | |
| *Douglas | | | | | | | | | | | | |
| Edwards | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Elk | 0 | 0 | 2 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ellis | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Ellsworth | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finney | 2 | 2 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ford | 1 | 1 | 3 | 0 | 3 | 2 | 3 | 1 | 0 | 0 | 0 | 0 |
| Franklin | 0 | 0 | 1 | 0 | 9 | 2 | 3 | 0 | 0 | 0 | 0 | 0 |
| Geary | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gove | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Graham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Grant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| *Gray | | | | | | | | | | | | |
| Greeley | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greenwood | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hamilton | 3 | 0 | 0 | 0 | 18 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Harper | 0 | 0 | 1 | 0 | 10 | 1 | 1 | 0 | 3 | 0 | 0 | 0 |
| Harvey | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Haskell | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hodgeman | 1 | 1 | 1 | 1 | 3 | 1 | 0 | 0 | 85 | 0 | 0 | 0 |
| Jackson | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Jefferson | | | | | | | | | | | | |
| Jewell | | | | | | | | | | | | |
| Johnson | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kearny | 0 | 0 | 0 | 0 | 3 | 1 | 7 | 0 | 0 | 0 | 0 | 0 |
| Kingman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kiowa | 4 | 4 | 1 | 0 | 8 | 1 | 6 | 0 | 0 | 0 | 0 | 0 |
| Labette | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane | 0 | 0 | 2 | 0 | 2 | 1 | 15 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lincoln | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linn | | | | | | | | | | | | |
| *Logan | 0 | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| Lyon | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Marion | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marshall | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| McPherson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

| COUNTIES. | Tubercu- losis. | | Typhoid fever. | | Diph- theria. | | Scarlet fever. | | Smallpox. | | Measles. | |
|--------------------|--------------------|---------|-------------------|---------|------------------|---------|-------------------|---------|-----------|---------|----------|---------|
| | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. | Cases... | Deaths. |
| Meade | 1 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Miami | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mitchell | 0 | 0 | 0 | 0 | 13 | 2 | 2 | 0 | 11 | 0 | 0 | 0 |
| Montgomery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Morris | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Morton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nemaha | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Neosho | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ness | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norton | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Osage | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Osborne | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ottawa | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Pawnee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 22 | 0 | 0 | 0 |
| Pottawatomie | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pratt | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Rawlins | 0 | 0 | 0 | 0 | 36 | 1 | 2 | 1 | 2 | 0 | 0 | 0 |
| Reno | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Republic | 0 | 0 | 0 | 0 | 2 | 1 | 13 | 0 | 0 | 0 | 0 | 0 |
| Rice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Riley | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rooks | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| Rush | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Russell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saline | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| Scott | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Sedgwick | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Seward | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shawnee | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 7 | 0 | 0 | 0 |
| Sheridan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sherman | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Smith | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stafford | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stanton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Stevens | 1 | 1 | 0 | 0 | 3 | 1 | 4 | 0 | 5 | 0 | 0 | 0 |
| Sumner | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Thomas | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Trego | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wabaunsee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Wallace | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Wichita | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilson | 4 | 0 | 1 | 1 | 2 | 0 | 5 | 0 | 5 | 0 | 0 | 0 |
| Woodson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wyandotte | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cities: | | | | | | | | | | | | |
| Atchison | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coffeyville | 0 | 0 | 3 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City | 9 | 9 | 17 | 3 | 22 | 3 | 16 | 0 | 0 | 0 | 0 | 0 |
| Leavenworth | 6 | 6 | 4 | 0 | 5 | 0 | 19 | 0 | 0 | 0 | 1 | 0 |
| Parsons | 4 | 1 | 2 | 2 | 6 | 1 | 5 | 0 | 0 | 0 | 10 | 0 |
| Pittsburg | 0 | 0 | 0 | 0 | 47 | 1 | 104 | 0 | 71 | 0 | 0 | 0 |
| Topeka | 2 | 2 | 3 | 2 | 13 | 2 | 13 | 0 | 37 | 0 | 0 | 0 |
| *Wichita | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| State Institutions | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* No report.

† No health officer.

DRUG ANALYSES No. XV.

By Profs. L. E. SAYRE and A. ZIEFLE, Drug Analysts for the State Board of Health.

LAWRENCE, KAN., December 14, 1908.

Herewith is submitted the fifteenth report from this laboratory. Included in this report you will notice a variety of preparations. Many of these are so old and deteriorated that they are unfit for sale. This statement is based upon the physical condition, such as a deposition of insoluble material, the sediment showing that the medicinal principles of the drug have been precipitated, leaving the supernatant liquid weak, and a partial decomposition has taken place in those physiological elements upon which the preparation is supposed to depend for its value. Such changes as are above referred to lead one to suspect that the preparation is unreliable. In this connection your director of drug analysis desires to say that his attention has been frequently drawn to a deteriorated condition found in certain drug materials, especially those packed for retail trade and kept by the latter in stock, concealed in attractive packages and wrappers—a class denominated patent medicines. It has been discovered that many of these become, by age, surprisingly deteriorated, and are, from a pharmaceutical point of view, unrepresentable. These drug products have no required standard, but it would seem that they should come within the application of regulation 30 of the Kansas food and drugs law, which reads as follows:

“When an article of food, liquor, drug or drink falls below the standard of quality, purity or strength which has been adopted, or which shall be adopted, by the United States Department of Agriculture or the Kansas State Board of Health, it shall be regarded as misbranded or adulterated, within the meaning of the Kansas food and drugs law of February 14, 1907.”

The difficulty appears to be to determine what would be considered legally as “deteriorated”—what tests should determine this condition. Some regulation or definition to meet the case might be suggested, such as the following:

By deterioration is meant: First, a deviation from the professed standard. The professed standard is regarded as that condition represented by the preparation when it is freshly prepared. Such deviation from the professed standard as above referred to may be determined by:

(a) Microscopical examination. If a medicinal liquid shall be

found by microscopical examination to have become so decomposed that bacterial germs and germs of decomposition are found therein, it shall be considered deteriorated.

(b) Chemical examination. If by chemical examination any of the professed ingredients, such as pepsin, pancreatin or any of the other ferments be found absolutely inactive, or if a coca preparation give no reaction, showing the absence of the alkaloid, etc., such preparation shall be considered deteriorated.

(c) Microscopical, etc. If a preparation differ in appearance materially from that freshly prepared; if, for example, there has developed a precipitate evidently through ageing of a liquid, or if it should from odor, taste or other physical tests show evidence of impairment or decomposition, any of these conditions shall be taken as ground for deeming the article deteriorated. Any deteriorate drug products offered for sale shall be liable to the application of regulation 30 of the food and drugs law.*

The report also refers to certain alcoholic liquids, the percentage of which is not stated upon the label. An important case of misbranding may be noticed in that of Papine, the morphine content not appearing upon the label. This, however, is very old stock.

In the report you will notice the term "referred." By this term is meant that conditions found have been especially referred to your department. The term "deteriorated" applies to the conditions which have been referred to above, and upon which some ruling is proposed.

In order that this report shall not consume more space than the BULLETIN allows this department in its present issue, it has been found necessary to condense the individual reports to the maximum limit. The details of the analysis and its results, however, can be obtained by your department from our laboratory records.

Lab. No. 2237, Insp. No. 1201. Tincture of Iodine. G. M. Lindley, Lawrence. Passed.

Lab. No. 2238, Insp. No. 1202. Spirits of Camphor. G. M. Lindley, Lawrence. Passed.

Lab. No. 2239, Insp. No. 1203. Whiskey (Compound). G. M. Lindley, Lawrence. Referred.

Lab. No. 2240, Insp. No. 1204. All Hail Malt. G. M. Lindley, Lawrence. Passed.

*The suggested methods for the determination of deterioration of so-called "patent medicines," or other secret medicinal preparations as above outlined, are hereby adopted as the official methods of the Kansas State Board of Health until further notice.

Lab. No. 2244, Insp. No. 1208. Jamaica Ginger. The Poehler Mercantile Company, Lawrence. Referred.

Lab. No. 2245, Insp. No. 1209. Sweet Spirits of Niter. The Poehler Mercantile Company, Lawrence. Substandard.

Lab. No. 2246, Insp. No. 1210. Essence of Peppermint. The Poehler Mercantile Company, Lawrence. Illegal.

Lab. No. 2247, Insp. No. 1211. Tincture of Arnica. The Poehler Mercantile Company, Lawrence. Illegal.

Lab. No. 2248, Insp. No. 1212. Sweet Oil. The Poehler Mercantile Company, Lawrence. Passed.

Lab. No. 2249, Insp. No. 1213. Tincture of Iodine. J. O. Holloway, Lawrence. Substandard.

Lab. No. 2250, Insp. No. 1214. Spirits of Camphor. J. O. Holloway, Lawrence. Passed.

Lab. No. 2251, Insp. No. 1215. Schuster's Malt. Schuster Brewing Company, Rochester, Minn. Misbranded.

Lab. No. 2252, Insp. No. 1216. Tincture of Iodine. Dick Bros., Lawrence. Sample contained 6.216 grams of iodine in 100 cc. Passed.

Lab. No. 2253, Insp. No. 1218. Powdered Nux Vomica. Brenker's Pharmacy, Topeka. Microscopical examination. Passed. Sample too small for assay.

Lab. No. 2254, Insp. No. 1220. Powdered Glycyrrhiza. Brenker's Pharmacy, Topeka. Passed.

Lab. No. 2255, Insp. No. 1221. Oil of Sassafras. Brenker's Pharmacy, Topeka. Passed.

Lab. No. 2256, Insp. No. 1222. Oil of Sweet Almonds. Brenker's Pharmacy, Topeka. Passed.

Lab. No. 2257, Insp. No. 1223. Balsam of Copaiba. Brenker's Pharmacy, Topeka. Passed.

Lab. No. 2258, Insp. No. 1224. Whiskey ("A Blend"). Brenker's Pharmacy, Topeka. Broken package. Referred.

Lab. No. 2259, Insp. No. 1225. Gin ("A Blend"). Broken package. Brenker's Pharmacy, Topeka. Referred.

Lab. No. 2261, Insp. No. 1227. Tincture of Iodine. Chesterfield Pharmacy, Topeka. Substandard.

Lab. No. 2262, Insp. No. 1228. Tincture of Cantharides. Chesterfield Pharmacy, Topeka. Passed.

Lab. No. 2263, Insp. No. 1229. Pioneer Brand Whiskey. Chesterfield Pharmacy, Topeka. Broken package. Referred.

Lab. No. 2264, Insp. No. 1230. Gin ("70 proof"). Chesterfield Pharmacy, Topeka. Broken package. Referred.

Lab. No. 2265, Insp. No. 1231. Harper's Whiskey. Chesterfield Pharmacy, Topeka. Misbranded.

Lab. No. 2266, Insp. No. 1232. Tincture of Iodine. Copeland County Drug Store, Topeka. Substandard.

Lab. No. 2267, Insp. No. 1233. Syrup of Rhubarb. Copeland County Drug Store. Deteriorated.

Lab. No. 2268, Insp. No. 1234. Dialyzed Iron. Copeland County Drug Store, Topeka. Deteriorated.

Lab. No. 2269, Insp. No. 1235. Fluid Extract of Quassia. Copeland County Drug Store, Topeka. Deteriorated.

Lab. No. 2270, Insp. No. 1236. Fluid Extract of Aletris. Copeland County Drug Store, Topeka. Deteriorated.

Lab. No. 2271, Insp. No. 1237. Nitrogenized Iron. Copeland County Drug Store, Topeka. Deteriorated.

Lab. No. 2272, Insp. No. 1238. Old Monk Whiskey. Copeland County Drug Store, Topeka. Misbranded.

Lab. No. 2273, Insp. No. 1239. Iodine Ointment. Copeland County Drug Store, Topeka. Deteriorated.

Lab. No. 2274, Insp. No. 1240. Whiskey. Copeland County Drug Store, Topeka. Broken package. Referred.

Lab. No. 2275, Insp. No. 1241. Papine. Copeland County Drug Store, Topeka. Illegal.

Lab. No. 2276, Insp. No. 1242. Fluid Extract of Senega. G. E. Smith, Topeka. Deteriorated.

Lab. No. 2277, Insp. No. 1243. Fluid Extract of Cottonroot Bark. G. E. Smith, Topeka. Deteriorated.

Lab. No. 2278, Insp. No. 1244. Fluid Extract of Rhubarb and Potassium Compound. G. E. Smith, Topeka. Deteriorated.

Lab. No. 2279, Insp. No. 1245. Whiskey. G. E. Smith, Topeka. The barrel was labeled "70 proof" and the sample contained 41.7 per cent. of alcohol.

Lab. No. 2280, Insp. No. 1246. Old Kentucky Colonel Whiskey. G. E. Smith, Topeka. Broken package. Referred.

Lab. No. 2281, Insp. No. 1247. Laurel Hill Whiskey. G. E. Smith, Topeka. Passed.

Lab. No. 2282, Insp. No. 1248. Olive Oil. G. E. Smith, Topeka. Rancid.

Lab. No. 2283, Insp. No. 1249. Oil of Sweet Almonds. G. E. Smith, Topeka. Rancid.

Lab. No. 2284, Insp. No. 1250. Quinine Bisulphate Tablets (5 grains). D. R. Osborne, Topeka. Deteriorated.

Lab. No. 2285, Insp. No. 1251. Fluid Extract of Damiana. D. R. Osborne, Topeka. Deteriorated.

Lab. No. 2286, Insp. No. 1252. Fluid Extract of Turkey Corn. D. R. Osborne, Topeka. Deteriorated.

Lab. No. 2287, Insp. No. 1253. Fluid Extract of Jaborandi. D. R. Osborne, Topeka. Deteriorated.

Lab. No. 2288, Insp. No. 1254. Dialyzed Iron. D. R. Osborne, Topeka. Deteriorated.

Lab. No. 2289, Insp. No. 1255. Tincture of Iodine. D. R. Osborne, Topeka. Passed.

Lab. No. 2290, Insp. No. 1256. Cough, Cold and Croup Cure. Manufactured by the R. R. Phillips Company, Chicago, Ill., and Arkansas City, Kan. Sample was retailed by D. R. Osborne, Topeka. Misbranded and deteriorated.

Lab. No. 2291, Insp. No. 1257. Fluid Extract of Liver Wort. C. W. Mead, Topeka. Deteriorated.

Lab. No. 2292, Insp. No. 1258. Fluid Extract of Bear's Foot. C. W. Mead, Topeka. Deteriorated.

Lab. No. 2293, Insp. No. 1259. Fluid Extract of Rue. C. W. Mead, Topeka. Deteriorated.

Lab. No. 2294, Insp. No. 1260. Baldwin Whiskey. C. W. Mead, Topeka. Misbranded.

Lab. No. 2295, Insp. No. 1261. Tincture of Iodine. C. W. Mead, Topeka. Substandard.

Lab. No. 2296, Insp. No. 1262. Blackberry Wine. G. P. Pierce, Topeka. Misbranded.

Lab. No. 2297, Insp. No. 1263. Tincture of Iodine. G. P. Pierce, Topeka. Substandard.

Lab. No. 2298, Insp. No. 1264. Papine. C. P. Pierce, Topeka. This sample contained morphine and alcohol; neither one was stated upon the label. Illegal.

Lab. No. 2299, Insp. No. 1265. Lime Water. G. P. Pierce, Topeka. Passed.

Lab. No. 2300, Insp. No. 1266. Schlitz Beer. Geo. A. Crampton, Topeka. Misbranded.

Lab. No. 2301, Insp. No. 1267. Whiskey ("90 proof"). Passed.

Lab. No. 2303, Insp. No. 1269. Dilute Phosphoric Acid. Geo. A. Crampton, Topeka. Passed.

Lab. No. 2304, Insp. No. 1270. Tincture of Iodine. Geo. A. Crampton, Topeka. Substandard.

Lab. 2305, Insp. No. 1271. Fluid Extract of Cranesbill. Geo. A. Crampton, Topeka. Deteriorated.

Lab. No. 2306, Insp. No. 1272. Beer. Jas. Connors, Argentine. Manufactured by Rochester Brewing Company, Kansas City, Mo. Misbranded. Alcoholic content not stated.

Lab. No. 2307, Insp. No. 1273. Kendall Club Whiskey. Jas. Connors, Argentine. Manufactured by S. Hirsch & Co., Kansas City, Mo. Misbranded. Alcoholic content not stated.

Lab. No. 2308, Insp. No. 1274. Whiskey (A blend, 80 proof). Jas. Connors, Argentine. Contains 42.05 per cent. alcohol.

Lab. No. 2309, Insp. No. 1275. Sweet Oil. Jas. Connors, Argentine. Rancid.

Lab. No. 2310, Insp. No. 1276. Tincture of Iodine. Jas. Connors, Argentine. Illegal—5.504 gms. of iodine in 100 cc.; no potassium iodine.

Lab. No. 2311, Insp. No. 1277. Spirits of Camphor. Jas. Connors, Argentine. Fourteen per cent. of camphor. Illegal.

Lab. No. 2312, Insp. No. 1278. Iron Brew. H. J. Knoff, Shawnee. Referred.

Lab. No. 2315, Insp. No. 1281. Sweet Oil. Union Pacific Tea Company, Chanute. Passed.

Lab. No. 2316, Insp. No. 1282. Soothing Syrup. F. W. Frewart, Chanute. Prepared by Pfeiffer Chemical Company, St. Louis, Mo. Passed.

Lab. No. 2318, Insp. No. 1284. Spirits of Camphor. Geo. H. Wolf, Urbana. Contained 7.7 per cent. camphor, 29 per cent. of water. Illegal.

Lab. No. 2319, Insp. No. 1285. Tincture of Arnica. Geo. M. Wolf, Urbana. Passed.

Lab. No. 2320, Insp. No. 1286. Sweet Oil. Geo. M. Wolf, Urbana. Rancid.

Lab. No. 2321, Insp. No. 1287. Tincture of Iodine. H. A. Brown, Chanute. Contained 4.12 gms. of iodine in 100 cc.; no potassium iodide. Illegal.

Lab. No. 2322, Insp. No. 1288. Powdered Nux Vomica. H. A. Brown, Chanute. Passed.

Lab. No. 2323, Insp. No. 1289. Bay Rum (Superior). F. J. Burghart, Leona. Prepared by the Beggs Manufacturing Company, Chicago. Weak in alcohol—35.6 per cent. of alcohol by volume.

Lab. No. 2324, Insp. No. 1290. Spirits of Camphor. F. J. Burghart, Leona. Passed.

Lab. No. 2328, Insp. No. 1294. Chamberlain's Antiseptic Lini-
ment. Chamberlain Medical Company, Des Moines, Iowa. Passed.

Lab. No. 2329, Insp. No. 6005. Iron Brew. Geo. Grubel, jr., Kansas City. Referred.

Lab. No. 2330, Insp. No. 7024. Iron Brew. C. H. Bachman, Fort Scott. Referred.

Lab. No. 2331, Insp. No. 11,010. Iron Brew (Extract). Capitol City Bottling Works, Topeka. Referred.

Lab. No. 2332, Insp. No. 6111. Turpentine. Central Linseed Oil Company, Omaha, Neb. Kerosene oil present. Adulterated.

Lab. No. 2237, Insp. No. 1298. Essence of Peppermint (original package). R. F. Mitchell, Aliceville. Prepared by C. A. Murdock, Kansas City, Mo. The sample contains 0.7 per cent. of oil of peppermint. Illegal.

Lab. No. 2339, Insp. No. 1300. Pure Refined Sweet Oil. R. F. Mitchell, Aliceville. Passed.

Lab. No. 2340, Insp. No. 1301. Port Wine. C. C. Moore Drug Company, Galena. Passed.

Lab. No. 2341, Insp. No. 1302. Whiskey (80 proof). C. C. Moore Drug Company, Galena. Referred.

Lab. No. 2344, Insp. No. 7199. Ground Cloves. J. C. Lyons, Ford. Referred.

Lab. No. 2345, Insp. No. 7200. Ground Ginger. J. C. Lyons, Ford. Weak in volatile oil.

Lab. No. 2346, Insp. No. 7201. Ground Allspice. J. C. Lyons, Ford. Weak.

Lab. No. 2347, Insp. No. 7202. Ground Mustard. J. C. Lyons, Ford. Passed.

Lab. No. 2348, Insp. No. 7203. Ground Cinnamon. J. C. Lyons, Ford. Passed.

Lab. No. 2349, Insp. No. 7204. Ground Pepper. J. C. Lyons, Ford. Passed.

Lab. No. 2350, Insp. No. 7198. Ground Cinnamon (Tiger Brand). Girardy Wooderd, Haviland. Contains cocoanut shells—stated on label.

Lab. No. 2351, Insp. No. 11020. Syrup of Ferrous Iodide. A. T. Waggoner, Topeka. Substandard; referred.

Lab. No. 2352, Insp. No. 2502. Ground Nutmeg. Atchison. Contains whole seed adulterated with mace and spermoderm (seed coats), which should be removed. Substandard.

Lab. No. 2353, Insp. No. 2501. Raw Linseed Oil. Atchison. Contains kerosene and suspended vegetable matter.

Deteriorated Patent Medicines.

Attention is called to the adoption of a *Standard* whereby patent medicines and other non-official or secret medicinal preparations may be judged as to deterioration or non-compliance to the Kansas food and drugs law under the definition of adulteration.

The three rules or methods of investigation under this standard are given in Prof. L. E. Sayre's report of drug analyses (No. XV), and are believed to be not only fair and reasonable, but scientifically accurate for practical purposes.

The writer has no knowledge of any standard or method that has been officially adopted by any state or the federal government by which such preparations may be examined and passed upon as to deterioration (adulteration) under the provision of the food and drugs law. It is confidently hoped that these or similar standards may be speedily adopted by other states, to the end that uniform requirements may obtain throughout the states, and that the oftentimes worse than worthless deteriorated nostrums may be forced off the shelves of the dealers.

Both the national and state laws demand that the U. S. P. and N. F. preparations be of standard strength and quality, and drug officials are presumed to call to strict account all dealers who refuse or neglect to comply with the law in this particular, and we can see no good or just reason why all other preparations should not conform to the professed standard of strength for which they are sold, and, failing to do so, to be met with the same charges and penalties as in the case of official preparations.

Take, for example, Dr. Blank's Elixir of Pancreatin and Bismuth. If an examination discloses the fact that there is no pancreatin present, either through failure to put pancreatin in the mixture, or by reason of deterioration, such preparation should be held to the definition of adulteration. See section 7, subdivision second under "Drugs," which reads as follows: "If its strength or purity fall below the professed standard or quality under which it is sold."

It is admitted that this rule or standard will be a "wide-reaching" measure; but why not? Why should the dealer who is required to remove from his shelf the deteriorated fluid extract be allowed to expose for sale the deteriorated so-called ethical or proprietary or patent medicinal preparation?

Dealers are hereby notified that the sale or exposing for sale of deteriorated patent medicines is illegal, and are urged to make a careful examination of stock to cut out all such as show marked evidencies of deterioration. Do it now!

Echoes from the International Congress on Tuberculosis.

(Continued from November BULLETIN.)

Give him air, he'll straight be well. — *Shakespeare.*

One of the most valuable exhibits at the congress was that exhibited under the auspices of the Boston Association for the Relief and Control of Tuberculosis, which illustrates what may be done in an educational way through our public-school system in teaching measures and means of prevention of tuberculosis. The lessons are so simple as to be readily understood by the smallest child, yet the principles of hygiene are so forcefully presented as to arrest the attention and approval of the most thoughtful teacher, parent, or sanitarian.

It is urgently recommended that these lessons be adopted as a part of the curriculum of the schools in this state during the coming year.

PRINCIPLES OF HYGIENE TAUGHT THROUGH SUBJECT "GARDENING."

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| 1. CLEANLINESS. Removal of weeds. Removal of pests. Leaves freed from dust. | 3. EXERCISE. General care of garden. Use of tools. Work outdoors beneficial. |
| 2. PURE AIR AND SUNLIGHT. Beneficial to growth and health. Develops color. Leaf breathing. Proper temperature; ventilation. Freedom from poisonous gases. | 4. ESTHETICS. Harmony of organization. Color. Arrangement. Form. Moral and spiritual life strengthened by means of. |

The study of the plant and garden gives to the child an understanding of the laws of hygiene. Here is found the same order of life for man and plant. Plants are living things with vital functions and parts. They have systems of digestion, assimilation and respiration, with specialized organs for carrying on the various processes, much the same as animals. They breathe for the same purpose as an animal, and require pure air and sunlight. They require food, as all other living things. The essentials for growth are the same. The applications of these principles of growth make for the child's well-being and a more conscious knowledge of himself. Every element of order, neatness and beauty, every broadening influence, every appeal to the finer nature of the child, means better men and women and a more thrifty, prosperous and attractive community.

PRINCIPLES OF HYGIENE TAUGHT THROUGH SUBJECT "HYGIENE OF CLOTHING."

1. CLEANLINESS.

Care of Clothes: Change of clothes. Handkerchiefs—Use and abuse. Laundry.

2. PURE AIR AND SUNLIGHT.

To equalize the temperature of the body, protection to the body, airing and brushing clothes, disinfecting.

3. EXERCISE.

Proper clothing to allow free movement of body.

4. ESTHETICS.

Simplicity, economy, suitability.

"To see ourselves as others see us." To familiarize the child with proper clothing, the doll is to be a companion in play. The same care is to be taken of the "play child" or doll as the real child. Health is the most important object of dress. Proper clothing and its care in a great measure is essential to a child's healthy condition. Habits of cleanliness, neatness and essential order cannot be developed without cultivation in the early life of children. The care and protection of the body afford one of the best opportunities for the growth of these virtues. Through play with the doll the child learns these principles of hygiene, such as the necessity of soap and water and sunshine to make the clothes clean after the soil of play; the change of clothes for winter and summer; the protection against stormy weather; the looseness to allow easy movement of the body; the attention to airing the clothes when put to bed. Simplicity indicates refined taste. A higher estimate will be placed on the body when the child is taught to combine the healthful with the beautiful in dress.

PRINCIPLES OF HYGIENE TAUGHT THROUGH SUBJECT "FURNISHING OF THE HOME."

1. CLEANLINESS.

Necessity for bare floors, clean walls, simple furniture, and only necessary pieces.

2. PURE AIR AND SUNLIGHT.

Care of windows. Few draperies; blinds open; shades up; windows clean; open top and bottom. Screens for top and bottom to keep out dust, flies and mosquitoes.

3. EXERCISE.

Overexertion avoided by the simply furnished home. Convenient arrangement *versus* fetch and carry.

4. ESTHETICS.

Attractiveness. Soft colors. Plain walls. Few pictures. Ornaments few but well chosen.

The rooms furnished—bedroom and bath-room—give opportunity to apply many sanitary principles. With this end in view, the outlines of the simplest room are drawn and furnished as completely as possible with pictures of furniture cut from catalogues, papers and magazines. While cutting out the pieces of furniture, the essential things to be considered in their construction and fitness of purpose are talked about. When the furniture is ready, the next step is a representation of the room on paper. The finish of the walls, floors and ceilings is considered, while the effects of color and texture are brought out in application to the sample room in different exposures. Lastly the furniture is placed in the room where it fits best.

It is the child's first attempt to make a home as she would like to have it, and if at this early age she can be led to know and choose the good for her miniature home, when she can have all the freedom of pencil pictures and a pair of scissors, it is to be hoped that with advanced training, which comes later, she will be more able to help along the ideal which is sought.

PRINCIPLES OF HYGIENE TAUGHT THROUGH SUBJECT "PERSONAL HYGIENE."

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| <p>1. CLEANLINESS. Daily baths: Care of head, eyes, ears, nose, teeth, hands, feet, nails, and skin. Simplicity of clothing: Easily laundered; inexpensive; frequent changes possible.</p> <p>2. PURE AIR AND SUNLIGHT. Lung breathing, skin breathing: Necessary for health and growth.</p> | <p>3. EXERCISE AND REST. Development of the body: Outdoor walks and recreations; sleep.</p> <p>4. ESTHETICS. Beauty without health is incomplete. "Body helps the soul, and the soul helps the body."</p> |
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The right care of the body must be included among the necessities of education. The teaching of the principles of hygiene should be closely related to the lives of the children. Correct habits, not rules, are the proper prevention for all sorts of defects. To secure and maintain a healthy body there must be inculcated habits of cleanliness and enthusiasm for health. Such habits can be readily impressed on the body while it is plastic and growing—that is, while it is young—but they are acquired only with difficulty and by much thought in after years. Hence there is the greatest economy of time and energy in accustoming young people to habits of daily living which will give them the best chance in after life—the chance to be "healthy, happy, efficient human beings." Most of the teaching must be by indirect methods (illustrations), and so the doll is used again to demonstrate and relate facts about the daily life.

PRINCIPLES OF HYGIENE TAUGHT THROUGH SUBJECTS "FOOD AND COOKING."

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| <p>1. CLEANLINESS. Buying clean food. Storing. Preparing food in a cleanly way. Serving individual dishes. Care of kitchen and refrigerator. Cleansing of dishes and utensils. Disposal of refuse.</p> <p>2. PURE AIR AND SUNLIGHT. Ventilation of pantry. Fresh air in kitchen. Essential to vegetable growth. Beneficial to health and temperament.</p> <p>3. EXERCISE. Correct use of the body. Energy saved by using only the muscles necessary in the accomplishment of any task.</p> | <p>4. ESTHETICS. Attractiveness. Order. Pretty dishes. Simple table decorations. Fresh linen. Serving. Invalid's tray.</p> <p>5. FOOD. The purpose of food. Constituents of food and their value as nutriment. Food in relation to age and occupation. Common articles of food and their value in the diet. Palatable, digestible, seasonable. Invalid cooking. School lunches.</p> |
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An old Scotch writer once said, "He that would be good must be happy, and he that would be happy must be healthy." The great increase of disease from causes under individual control, such as those which are brought on by errors of diet, points to a more general education in this respect. The food problem is fundamental to the welfare of the race. Society, to protect itself, must take cognizance of the questions in relation to food and nutrition. It is necessary to give the child the right ideas on these subjects, for only then will there be sufficient effort to get the right kind of food and to have it clean. Right living goes further and demands the right manner of serving and eating the food. The home table should be the school of good manners and of good food, habits of which the child ought not to be deprived.

PRINCIPLES OF HYGIENE TAUGHT THROUGH SUBJECT "CARE OF THE HOME."

1. CLEANLINESS.

Removal of dirt and waste matter : Sweeping and dusting. Wiping feet on the door-mat. Depositing paper and refuse of all kinds in boxes, baskets and cans. Spitting only in the proper receptacles, never on halls, stairs, or floors of house. Necessity of keeping waste matter out of doors as much as possible, instead of in cellar. Advantage of burning garbage whenever possible.

Plumbing and drainage : Flushing closets thoroughly. Avoidance of clogging sinks and drains. Bad odors, their causes and removal.

Disinfection : Various methods suitable for domestic use. Necessity for thorough disinfection of all toilet vessels and articles used in cleansing them. Periodical disinfection of closets and other places used for storing when a circulation of air cannot be obtained. Disinfection of whole house as done by board of health or under direction of physicians. Necessity of keeping separate as much as possible dishes and utensils used by sick people. Necessity of following closely physician's directions for disinfecting everything used by and for the sick.

2. PURE AIR AND SUNLIGHT.

Causes of vitiated air : Gas and coal stoves. Steaming teakettles and other vessels. Lamps, illuminating gas.

Method of obviating these contaminating influences : Pure air by means of proper ventilation. Open windows and doors. Ventilators. Proper use of dampened cloths for cooling air. Value of pure air and sunlight in destroying disease germs and prevention of mustiness and moldiness.

3. EXERCISE.

Proper method — standing, sitting, bending, stooping, walking and breathing. Necessity of fresh air. Correct observance of the above results not only in health and spirits, but gracefulness.

4. ESTHETICS.

Home made more attractive and beautiful by attention to preceding topics. Coöperation among members of the family lightens work and makes selfishness impossible. Personal responsibility and cheerfulness make for the enjoyment of the beautiful home. The spirit as great as the material needs.

In making and furnishing of the miniature bedroom, the children first find the actual dimensions of the room and its several spaces. They are compared with actual dimensions of rooms in their own homes. The advantages or disadvantages of windows and doors in position, size, and relation to light, air, cleanliness, convenience and economy in furnishing are considered. A plan of the room on one-half-inch scale is made and articles of furniture determined on and located. The finish of walls, floors and ceilings is again considered. The desirable qualities of iron, absorbent surface, of smoothness, adaptability to safe, frequent, rapid and thorough cleansing, are made the foundation of choice in additional parts of the construction, as base-boards and chair-rails; in floor finish; in window furnishing, and economy of time, money and labor, are considered in connection with the sanitary and esthetic relations. The endeavor is always to connect actual conditions with others more desirable and, whenever necessary, to raise the ideal by such subtle steps as to avoid all defects; to acquaint the child with sanitary, esthetic and economic principles in detailed relations with the finished furnishing and care of her own home.

Abstracts of the following papers are indicative of the *new world-movement* to use the great public-school system for something more than teaching the three R's.

At the recent conference called by Governor Hoch for the purpose of inaugurating a state-wide campaign for the suppression of tuberculosis, his excellency gave expression to this sentiment—that in his judgment it was “as great a shame and disgrace for a school to turn out a physical wreck as it was to turn out a knowing nothing or an imbecile”; with which all lovers of the race will heartily agree.

ELEMENTARY INSTRUCTION AS TO TUBERCULOSIS.

By A. E. WINSHIP, Editor Journal of Education, Boston.

If the teacher and the pupils in the grades are so overworked that there is not time to save human lives by specific instruction as to the prevention of tuberculosis, a most important need of the present time is to see if any part of the work can be eliminated to advantage.

I have never seen an elementary school program from which much could not be eliminated without perceptible loss to any child. There is always much of rubbish in processes and in methods. There is no pretense on the part of any teacher that all of the teaching is of direct value to the children, and the excuse offered for taking so much time with it is that it is good discipline. The disciplinary value may be conceded, and then it can be shown that neither arithmetic, nor grammar, spelling, nor geography discipline the mind more than the earnest study of so much physiology and biology, chemistry and physics, geography and civics, domestic science and architecture as are needed for the elimination of tuberculosis.

A teacher or superintendent who will deliberately say that the disciplinary value of any subject now taught is greater than that which could be gained from teaching about tuberculosis is wanting in a knowledge of educational values.

HYGIENIC INSTRUCTION IN SCHOOLS.

By DR. HENRY BARTON JACOBS, Baltimore, Md.

In order to control tuberculosis it will be necessary to rely in the last instance upon education.

Hospitals, sanatoria, dispensaries, camps, may have great influence in alleviating or even curing those already infected with tuberculosis or other infectious diseases, but their influence in checking the spread of that disease is to be found in education as to necessary precautions and the proper manner of life. These institutions, therefore, become schools in which hygiene is taught to their inmates. These, for the most part, are people already infected, though this educative influence extends to some friends and visitors of inmates and so reaches those who are still well. But both of these classes, the inmates and their friends, belong to the adult population, those with conceptions and habits already formed, who take in new ideas less readily than more youthful minds. They belong to a generation which is passing rather than to a generation which is coming, and for these reasons these institutions have less effect upon the final solution of the tuberculosis problem than if their influence or that of other institutions could be directed upon the more youthful members of the community, the boys and girls of to-day, who constitute the coming generation of workers and of parents.

The public schools, academies and colleges are a series of institutions which are molding the growing intelligence of the country; their pupils of to-day will be the men and women of to-morrow, and if in them the same kind of instruction in hygiene could be given in a practical, effective and convincing manner, as it is given to the patients in sanatoria, they would be sending out into the world a youth ready for the emergencies of life and with an understanding of how to avoid the preventable diseases. Until the schools make provision for this kind of teaching, it cannot be hoped to cope successfully with tuberculosis and the other infectious diseases. The teaching for the younger classes should be directed largely to the formation of automatic habits of hygiene, a love for cleanliness and neatness and the things of out-of-doors, and should proceed in daily lessons until every pupil at graduation should have as complete mastery of the fundamental rules of health as he has of spelling, reading or arithmetic. New text-books must be written and teachers and school authorities with these new ideas found.

Never will the suppression of the preventable diseases be secured until the coming generation rather than the passing one is instructed in the proper methods to be pursued.

REPORT ON THE TEACHING OF ELEMENTARY HYGIENE IN GREAT BRITAIN AND IRELAND.

By DR. G. A. HERON, F. R. C. P., delegate of the Royal Society of Medicine, London.

In England and Wales a great step has been gained in the cause of school education in hygiene. On August 1, 1908, ended the evil system which, till that date, allowed the study of hygiene to be optional with those who meant to become school teachers. On that date it was included among the subjects which an "intending teacher" is obliged to study during his years of special instruction in the training college. In the course of a year or two there should, by this means, be available a considerable and increasing number of

young men and women with some knowledge of the subject and of how it should be taught to school children.

12. An admirable new departure has also been made by the board of education in issuing for the first time syllabuses for the teachers of children who are blind, or deaf, or mentally defective.

13. When the students complete their course at the training college there is an examination to be passed, and a part of this examination is a special paper on hygiene.

14. An object the board of education has in view in giving this course of special instruction and of examination is to avoid even the semblance of turning out teachers who might imagine themselves to be specialists in hygiene. The object of it all is to endeavor to secure for the school a teacher who is "able to appreciate the conditions, both mental and physical, which unfit a child for school work," and who is so trained that he would be likely to pick out a child who failed to acquit himself creditably, not because he was unwilling to work, but because he suffered from some defect or incapacity.

15. In Scotland all the training colleges have courses of instruction in hygiene. No syllabus on instruction in hygiene is issued for use in training colleges or schools, because the instruction is given by properly qualified lecturers, who, with only three exceptions, are graduates in medicine. It must be admitted that in England, Wales and Ireland the teaching of hygiene in schools has, until to-day, been behind the times. In Scotland this is not the case; for there the teaching of hygiene in the training colleges has been, for the most part, entrusted to properly qualified medical graduates, who have done the work well.

16. The new departure in England and Wales which began on August 1 promises well. The permanent officials of the board of education are well aware that the interest taken in the teaching of hygiene is not now, as it has formerly been, almost confined to a mere handful of doctors. It is a real public recognition of the neglect and indifference with which that important subject has, hitherto, been treated in the education of our children.

17. In Britain the medical inspection of children is now a feature of school life. If it be thoroughly done—and there is every reason to believe that it will be done—the medical inspection of school children will in itself, I venture to predict, prove one of the most useful means of giving valuable object lessons in hygiene, not only to the children, but to the whole community. The same end will be furthered by the proper teaching of gymnastics in schools.

Though it is not easy to over-rate the power of education as a force working, on the whole, for good, still it is possible to fall into that error. I am, however, sure of this, that no one who has thought about it will accuse me of so erring when I venture to assert that education of the kind dealt with in this report will go very far indeed to help us vastly to lessen, and with increasing frequency to end, the ravages of the diseases which scourge the human race. For my own part, I venture to say that every disease is preventable, perhaps with only one exception—the disease which shows itself in extreme old age, and which, because we know not precisely what it is, we call senile decay. Sound education in hygiene, given both to school children and to adults, is the chief means by which we can not only immensely lessen but practically end the existence of tuberculosis.

TUBERCULOSIS IN THE PUBLIC SCHOOLS.

By DR. LUTHER H. GULACK, New York.

The importance of attacking this problem through the agency of the public schools is indicated by the fact that ten out of eleven of all of the children of the United States come under the jurisdiction of the public-school system for approximately seven years, namely, from seven to fourteen.

The ultimate attitude of society toward such problems as this is not determined primarily by the discussions which occur in the daily press, but by the attitude which is taken and secured by children during the years of their school life.

Our daily acts are not predominantly the result of conscious thinking, but are, and must be, largely automatic. Conduct, then, is the thing to be aimed at, rather than merely intellectual information.

With the reconstruction of society, due to the development of machinery, with the development of a democracy which depends upon the intelligence of all the citizens, the state had to adopt general education—not primarily because of the elevation of the individual, but as a measure of self-protection. These are the identical reasons why the state must through the same agency, namely, the department of education, protect itself from these ravages of disease which are dependent upon ignorance with reference to the fundamental facts of life. How to so manage the home organization as to live most effectively has only recently come to be regarded as one of the basal elements in general education. It is, therefore, as yet, not treated as a prominent topic in the curricula of our normal schools or colleges. In practically no normal schools is it yet ranked with such sciences as psychology, education, history and the like.

This changed attitude of the state expressing itself through the schools towards health does not mean merely, or mainly, the thrusting of additional burdens with reference to instruction upon the existing force. It means grafting into the service of departments of education experts who are qualified from the educational standpoint, whose rank and power shall be coequal with those who work exclusively from the standpoint of education. Health and education must go hand in hand. This cannot be done by making the subject of health a subdivision of some relatively smaller topic which is not considered as a primary matter with reference to promotions, diplomas, or the granting of licenses. It is a fundamental matter with reference to the protection of the state, and must so appear in the education of those individuals who have to do with the education of our future citizens.

The state, in order to protect itself, must bear as definite a relation to the health of its children as it does to their education. These two purposes must be administered in the main by a single department of our government, namely, the public school. Hence it is inevitable that there should be established, as part and parcel of our department of education, groups of medical experts who shall see not only that the school is conducted without injury to the health of the school children, but that they are a positive factor in raising up for our republic a body of citizens which is not only intelligent, but which has that background of vitality and power without which education, science, philosophy and art are relatively valueless.

A PROPOSITION TO INTRODUCE A PUBLIC HEALTH WEEK INTO THE PUBLIC SCHOOLS.

By CH. WARDELL STILES, Ph. D.

As a result of his investigations in the South, Doctor Stiles has proposed the introduction of a "Public Health Week" into the public schools, in order to teach the following three great hygienic principles to the children:

First.—Do not spit on the floor, for this habit spreads tuberculosis and diphtheria.

Second.—Do not pollute the soil, for this habit spreads typhoid fever, and ground itch with its resulting hookworm disease.

Third.—Protect against mosquitoes, for mosquitoes spread malaria, yellow fever, dengue, and elephant-foot.

The proposition has met with favor, and if certain legal points can be arranged the plan will be put into active operation this coming year. The plan involves the issuance of popular circulars by the United States Public Health and Marine Hospital Service, which the state superintendents of instruction can adopt as text-books, to be used in the physiology classes during public health week.

EDUCATIONAL PROPAGANDA IN SCHOOLS, SETTLEMENTS AND CHARITY ORGANIZATIONS.

By DR. HENRY B. WARD, Dean Omaha Medical College, University of Nebraska, Lincoln.

The government has exerted control over quarantine and sanitary conditions with great benefit to the people at large. Such efforts to remedy a situation that has already become serious are properly secondary to preventive measures. Of all such, educational propaganda are the most profitable and yet heretofore the least frequently employed. The organized school system of the land is the natural educational agency and is far more extensive and effective than any other special agency which might be created. Every school course provides for the study of hygiene. In this the prevention of disease, especially of tuberculosis, should have much greater emphasis. Tuberculosis is in many ways an especial menace to our schools. A strong national commission should be appointed by the United States Bureau of Education and the National Association for the Study and Prevention of Tuberculosis to prepare for use in the schools proper synopses so as to insure general respect and exert the maximum influence. Such material could be laid before old teachers in state and county institutes and also by coöperation through teachers' associations, schoolmasters' clubs and similar voluntary organizations. The teaching profession is alive to the dangers and will welcome assistance from those entitled to speak with authority.

Settlements, social clubs and organized charities are semiofficial, since they are often subsidized by the municipality. Consequently they can justly be asked to do definite work in the city educational campaign. They are awake to the needs of the situation and will coöperate effectively and promptly. They need definite plans for educational work. Thus here also exact formulation of a proper program is the most important factor.

**THE BODY OR THE BACILLUS; WHICH SHALL BE EMPHASIZED
IN THE HYGIENIC EDUCATION OF THE PUBLIC?**

By DR. HOWARD S. ANDERS, Philadelphia.

The educational principle vital and fundamental in the prophylaxis of tuberculosis; great responsibility and discrimination needed in right placing of emphasis in instructing public as to causes and ways and means of prevention; antituberculosis instruction of a well-balanced type should receive as much time and care as antialcoholic instruction in public schools and academies and colleges.

Consideration of this paper based upon the relative values of two fundamental conditions of causation; the body and bacillary, and their bearing upon popular education at the present time. Reference made to historic swing of emphasis from idea of heredity and debility to germ menace; now, backward to a degree, to more rational attention to wide importance of various predisposing and direct causes of bodily susceptibility in domestic, social, industrial and commercial conditions. No reason or safety in neglecting microbic factor in relation to sanitation, dust evil, spitting habits, etc., but probably better to teach, with greater emphasis, importance of preserving vital resistance, or invigorating it, by improvement of living and working and traveling conditions.

Sanitary prophylaxis therefore is still a valuable part of education, especially through boards of health; but preponderance of education of young and adult should be directed along lines of sustaining and increasing bodily health and vigor, because of multiplicity and complexity of deteriorating factors.

**Kansas Association for the Study and Prevention of
Tuberculosis.**

December 3, 1908, is an historical date in Kansas, for on this day was organized the Kansas Association for the Study and Prevention of Tuberculosis, the purpose of which was to inaugurate a state-wide campaign for the suppression and control of this plague of mankind. In response to a call issued to the people of Kansas by the governor, which was published in the last BULLETIN, a large number of people assembled in Representative Hall, and the work of organizing a state association was begun. After a brief statement by the governor as to the purpose of the meeting, upon motion his excellency was chosen to be permanent chairman. One of the most masterful addresses ever made by the governor was given on this occasion, which is herewith presented to the readers of the BULLETIN. The governor spoke as follows:

I need not tell you that you have met to consider a very important problem, and it would be presumptuous on my part to attempt to discuss at any great length the question with which you are much more familiar than I am.

A year ago I attended the opening of a creamery convention, and was on

the program to make an address. Preceding me were a number of experts. As I sat there and listened to those experts from all parts of the United States, I turned to my good friend, Judge Sturgis, and said, "Judge, what can I say that shall either instruct or entertain an audience of experts on a particular subject?" and the judge said that which I shall not forget, "Knowledge limits a speaker."

I repeat that I need not tell you folks that you have met here to consider a tremendously important subject. We are proud of the record made by the Twentieth Kansas abroad; but if every member of the Twentieth Kansas had died across the sea in battle, it would have stirred this state from one end to the other. But every year a greater enemy than that which confronted the Twentieth Kansas takes from our citizenship double the number of the Twentieth Kansas. We read with horror yet the tremendous mortality of the civil war, but my understanding is that this enemy with which you have to deal destroys more lives every year in the United States than went down in war in the terrible days of the '60's. If some invading army should come into the United States, or Kansas, we would tax every power of the people to repel the invasion, but here is an invader more calamitous than could possibly be the invasion of an army, and it is within our power, so you experts tell me, to repel this invasion, to expel this invader, to save the lives of our people. It is worthy of your coming here from every part of the state to devote this time to an intelligent movement to stamp out of our great state this great enemy of the people.

I am glad to learn from the experts the hopefulness of the conflict. I am glad to know the possibilities of success if we go at it intelligently and unitedly, and I say to you again, that in my judgment no body of people have met in this state to consider a more important subject than that which we have assembled to consider. I look for an intelligent discussion of the subject—I look for an intelligent crystallization of intelligent methods to accomplish the results in this great conflict.

I am one of those who believe that Kansas is perhaps less subject to this disease than any other state in the Union. I do not know what the statistics prove, but I should think that our altitude, the purity of our atmosphere, the absence of large, crowded cities, the fact that we have a population better and more equally distributed than anywhere else, where there are comparatively few hovels and poverty—I should think that these conditions, with the intelligence of the people of Kansas—I should think that the statistics would prove that we have less mortality from this than perhaps any other disease; but we have too much of it, even in Kansas. It is a great problem, so great that I, myself, have been astounded by the awful statistics of the conditions which exist, even in Kansas, which have been presented to me the last few weeks. I have been astonished, as I am sure you have been, at the conditions in this clean and unusually sanitary city. If a map like that can be made in a town like Topeka, what are the facts if properly pictured in a city like New York, Chicago, or any other large city? The great congress which assembled recently in Washington I believe is the beginning of a movement that shall ultimately win the victory over this great foe of our kind, and I am glad that Kansas and this great representative people this afternoon are taking the lead in this great national movement to help stamp out the great white plague. Though I welcome you here, I shall indulge in

no words of useless compliment, but I do think you deserve the gratitude of the people of the state for coming here in such large numbers to devote your time and thought toward helping to start one of the greatest movements ever inaugurated in the state of Kansas.

Mr. W. J. V. Deacon, statistician for the State Board of Health, had prepared a map of the city of Topeka, wherein black-headed tacks were placed, each one of which represented a death from tuberculosis in the city during the past ten years. This demonstration was a revelation to all those present, and excited much comment to the effect that it was a fine illustration of the general prevalence of the disease which was hitherto unsuspected, and the urgent necessity for measures of prevention to be inaugurated at the earliest possible date. It was pointed out that the conditions in Topeka were no worse, and probably much better, than in other cities of the state.

Under the text "A Few Facts," Mr. Deacon spoke as follows: I am very glad to have the opportunity to present to you at this time a few figures, which, while they deal exclusively with the situation in the capital city, will, I believe, but portray the condition existing throughout the state; with the possible exception that the cities on our eastern border, representing more congested conditions, will probably show a higher death rate.

This map and the statistics are wrong because they only partially portray the conditions; many deaths are not recorded at all, while many others of undoubted tubercular origin are registered under some other head. I do not believe that I am high when I say these figures might be doubled, but I am presenting only the figures shown by the books of the health department. Our system of registration is cumbersome, unwieldy and inaccurate, and must be improved.

In the map before you every tack represents a death from tuberculosis in Topeka within the past ten years, and there are 480 tacks there, of which 291 were males and 279 females; 319 were whites and 161 were negroes. Of the 319 white, 134 were males and 185 were females; of the negroes 67 were males and 94 were females. These figures, coldly presented, convey but little information to the mind. Let me elaborate a little. This is an average of 48 deaths a year for ten years. The average population of Topeka during that period was 38,210; consequently, for every 10,000 of population 12.63 have died of tuberculosis. This same ratio extending over our state, with a population in 1907 of 1,651,331, would represent 2,084 deaths, and for a period of ten years 20,840, or half the population of this city. The BULLETIN made a statement last month that at the present rate 50,000 of the present generation in Kansas were doomed to die of this dread malady. To this statement I must take exceptions, for by this showing above 65,000 would die within the next generation, which is equal to almost four per cent. of the total population of the state.

The problem before this meeting to-day is, in my opinion, economic, sociological and educational before it is medical, and the success of the cam-

paign which this assemblage is here for the purpose of inaugurating depends on the prevention of the disease rather than its cure.

To those of you who are familiar with the various districts the map will tell the story of unsanitary environment, ignorance, filth, poverty, vice and congestion, carrying in its wake the story of destitution and death.

Among the negroes of this city death from tuberculosis has reaped a rich harvest—24.8 per 10,000 of the population; more than twice as high as among the white people, which average 10 per 10,000. As to the reason, I will leave it to some of the medical profession to explain; but if we will visit some of the negro neighborhoods, which show so black upon the map, I think the miserable hovels, the squalor and lack of common-sense sanitation will tell the story.

In the north end, on this side of the river, we find another dark spot. This is a neighborhood largely peopled by Scandinavians—a neighborhood reasonably neat in appearance, and a people of good intelligence. I cannot offer a reason for the condition here except the well-known prevalence of the disease in their own country.

In the neighborhood of the Santa Fe shops we find many unfavorable conditions and many attacks. Here, I would suggest, is the problem for the economist and sociologist. These people are poor; they have no resources beyond the physical strength of the breadwinner. Suppose you succeed in educating these people to the necessity for clean and wholesome surroundings, warm clothing, rich diet and the other things the modern physician prescribes for his tubercular patient. How are they to obtain them? And when you add the most important item to the list—rest, absolute rest—the physician appears simply ridiculous in the eyes of his patient.

It has been very conservatively estimated that forty per cent. of all of the families having tuberculous members are absolutely incapable of affording the proper conditions of light, pure air, good housing, freedom from worry, nourishing food, and competent medical attendance, so essential to properly combat the disease.

At a sanitarium for the treatment of tuberculosis maintained by a distant state, their report shows that the diet costs the state \$5.50 per week per patient as against the cost of \$2.30 per week for the attendants at the same institution. To the laborer at \$9 to \$12 per week, and there are many of them within the borders of this state, treatment of proper diet is simply prohibitive.

Education is the key-note of this great campaign for humanity, but as you educate be prepared to show the way.

A word as to statistics: Many people wonder why it is necessary to keep elaborate vital statistics. It is because you must have reliable data to be able to locate the plague spots and wipe them out; the general commanding the army sends out his scouts to find the enemy and the weak points in his line; and so your health authorities must know where the enemy is, his strength and his weakness, that they may bring to bear the trained artillery of their organization and resources to rout and annihilate them. We must have compulsory registration of reports of all cases of tuberculosis.

On the sun-kissed prairies of this broad state of ours we have wealth, energy and education; Kansas has ever been to the forefront of the nation in all of those things which tend to uplift the people. The objects of this

organization will be explained to you by others, but I wish to reiterate: Where you find congestion, filth, ignorance, poverty and vice, there you will find tuberculosis.

May every organization in this state join in this great educational movement; may every schoolhouse, every church, every college, every normal and every Chautauqua hear and teach the doctrines of cleanliness, sanitation, sunshine and fresh air.

It is a great fight, but we are well armed, and by God's help we'll win.

The following resolution was then introduced and unanimously adopted:

Resolved, That the interests of the public health, particularly the question of tuberculosis control, demand the enactment of an efficient vital statistics law, a compulsory notification of typhoid fever and tuberculosis law, a state-wide anti-spitting law, and a general educational propaganda on hygiene and sanitation.

Resolved, That it is the sense of this meeting that the legislature should provide ample ways and means for the care and treatment of the tuberculous poor of the state, and a reasonable fund by which the State Board of Health may carry on an educational campaign of prevention.

Rev. D. M. Fisk, director of psychology and sociology at Washburn College, Topeka, then spoke upon the theme, "The Sociological Aspect of Disease with Special Reference to Tuberculosis," which in the judgment of the writer is one of the clearest, most forceful and comprehensive statements on this aspect of tuberculosis that he has ever had the privilege of hearing. Doctor Fisk spoke as follows:

THE SOCIOLOGICAL ASPECT OF DISEASE, WITH SPECIAL REFERENCE TO TUBERCULOSIS.

By D. M. FISK, Washburn College, Topeka.

The world-wide fact we consider to-day is not of interest solely to the physiological experts; it is also an economic and social question. A plague that digs 140,000 graves every year in our land, and presents to our bereavement an annual bill of one billion dollars for killing our dear ones challenges not only our families but our pockets. I wonder if we sense this stupendous fact. Our United States debt now stands at only \$964,000,000, but tuberculosis lays every single year a heavier burden on the nation by over \$30,000,000.

It may help us to comprehend the magnitude of this tax if we fix a moment's attention on one state—New York. Consumption costs the Empire state nearly as much every year as it costs the whole country for annual interest on the nation's debt, *i. e.*, New York pays over \$65,000,000, while the debt interest is only \$69,000,000. And while that state is paying this confiscatory bill she is nursing 50,000 consumptives and getting graves ready for her annual 14,000 dead by the same scourge.

But even this economic picture errs by defect. In it we have utterly failed to include even the larger economic factor (let alone the social ones), the value of the doomed man *himself*; his value as a worker, his worth as a

citizen. If an immigrant on the Ellis Island gang-plank is worth \$10,000, what about 140,000 dead Americans offered up every year to this needless Moloch? Even at a valuation of \$5000 for each dying consumptive, the annual money value would be over three times the total fire loss of the United States.

The social interrelations of this disease are so apparent that I may pass them to give emphasis to one often-forgotten point. Experts tell us that all this waste and woe is needless, and that even the disease itself is eradicable. Are these serious men mocking our suspense when they tell us that 70,000 now under sad sentence to death might be saved?

In savage times, contagious diseases were accepted as themselves malignant gods or demons visiting men to plague them. Three hundred years ago only, England hopelessly expected each year that half of all deaths would come from this "scourge of God," and there was nothing to be done about it. If we can make the modern world intelligent and well-disposed toward men, there will remain neither a dreaded "Shankapanna" nor a "scourge of the gods," but rather long life and confident labor.

Now, what are some of the facts on which we may build this confidence? First, it is not true by any means that if a man is attacked by this parasite he necessarily must give up the fight and die. Rather, the impressive fact is now that nine-tenths of all living adults have already met this enemy and routed it. The first line of battle to be opened against this unseen foe of the race is education.

How large a proportion of our fellow men know these three things? That in every person past thirty years of age there are already in-built victorious evidences of defeated tuberculosis germs, which like a swarm have at some time, or many times, attacked the organism, but have been captured, vanquished and buried? How many people of average intelligence know that in every man there is maintained a standing army of cellular multitudes of alert defenders of the integrity of the body—a vigilant leucocyte soldiery on our side against disease, who scarcely more than need decent treatment at our hands, to be well nourished, not over-taxed, given a fighting chance because of good air, adequate food and rest, and freedom from artificial poisons—and lo, they join the battle with these myriad zymotic foes, fight it out unknown to us, and rescue us from the mortal jeopardy we were unconsciously in. How many imperiled folk know that they have any such dauntless allies, or know enough to enlist their own intelligences on the side of that army of phagocyte defenders?

Surgically the average lay mind has gotten awake to the fact that every day miracles are wrought under the skillful knife. When shall the common man awake to the equally amazing fact that at last microscopy, biological investigation, vital chemistry and expert skill have organized other new miracles in preventing disease and healing hurts no less wonderful and of far wider utility.

We have now bright high-school youth by the tens of thousand; we have club-women; and Chautauqua reading circles. We have pulpits and lecture platforms; lantern exhibits and the public prints; state bureaus of health; and the propaganda of its readable, informing literature. What a shame it is that our inherited ignorance and our selfish apathy permit the continuance of this needless holocaust when by an active campaign of enlighten-

ment we could put hope into the disheartened, safety about the doomed, and life into the dying!

What harm would come if, instead of reading the last newspaper horror, our children were brought up with some knowledge of the marvels of diagnosis through the "tuberculin reaction," and the fairy-tale of "opsonin,"—to-day an utterly sealed book of hope to the millions.

Mr. Chairman, I am no expert—only a layman; but if I could add one word on this occasion to let discouraged families (who see the dread spectre shadowing their homes) know that this anticipated defeat is needless, even criminal, and that intelligence, pure air, rest, and ample nutrition would recruit to victorious power this leucocyte army within and save the day, I would gladly say that word.

If that equally needful economic word could be said, loud and authoritative, in the ears of greed and of legislative responsibility, viz., that where the private arm of poverty falls short, so that the prescribed rest, good food and fresh air are impossibilities to imperiled thousands, just there the state, industrial wealth, Christian charity should hear its divine and human call to make decent living a possibility, even for those whom grasping landlords, avaricious mill-masters, and their own ignorance, vices and incompetence have doomed to death.

O fellow citizens, what far-sighted prophet is able to picture what an exhilarating world this would be if the impure foods, the artificial poisons, the remediable diseases, the avoidable plagues, the slaughter of infancy, the hurried senility of age, were eliminated? If that sociologist were here whose absence we all keenly regret, what might not Doctor Blackmar have said to us of the dream of economist and sociologist, of the "social surplus," that high vitality, that economic competency, that endowed mind which ought to be the equipment of the common man, and not merely of the *élite* few? And what an immeasurable contribution to that goal (that has no business to be a "far off divine event," but ought to be knocking now at our doors) would be the stamping out forever of these parasites on vitality, chief among which is tuberculosis.

From the enthusiastic applause with which this address was received it was evident that his audience was in hearty sympathy with the speaker.

The secretary of the State Board of Health, after a brief statement, presented the constitution and by-laws of the proposed organization, which upon motion were unanimously adopted. The by laws provided for a board of directors of fifty members. The personnel of this board is based upon an entirely different proposition than has thus far been proposed by any other state organization. Hitherto the plan of the various societies for the study and prevention of tuberculosis has been to invite the coöperation of state boards and charitable and philanthropic organizations in the work of the organization, but the Kansas idea has been to make the various departments of the state's activities which may bear directly or indirectly upon the tuberculosis problem a part of the

organization. Thus, the governor, superintendent of public instruction, state labor commissioner, state live-stock sanitary commissioner, chancellor of the University, president of the State Agricultural College, president of the State Normal, president Quindaro University (colored), president Board of Control, and secretary State Board of Health are made permanent members of the board of directors, the personnel changing as often, but no oftener, than the personnel of the respective offices named. In like manner the various social, industrial and religious organizations are represented upon the board of directors, which include the following organizations: Kansas Red Cross Association, Kansas Federation of Women's Clubs, State Teachers' Association, State Medical Society, State Homeopathic Medical Society, State Eclectic Medical Society, State Veterinary Association, Kansas Editorial Association, Kansas Municipal League, State Y. M. C. A., State Federation of Labor, State Society of Labor and Industry and one representative each upon the board of directors who may be designated by a mutual agreement of the fraternal insurance organizations and the old-line insurance companies doing business in the state of Kansas.

Thus it is hoped by this close affiliation of state and public organizations to bring about a unity of work which perhaps will be more successful in the accomplishment of the purposes of the organization than a mere invitation to these various departments and organizations to participate in the state-wide movement.

After the election of the board of directors, in accordance with the provisions of the by-laws, the board met at eight o'clock in Representative Hall and elected the following officers: Dr. S. J. Crumbine, Topeka, president; Dr. Frank Strong, Lawrence, first vice-president; Dr. Harriet Comstock, Hutchinson, second vice-president; Dr. L. H. Munn, Topeka, treasurer; Dr. C. B. Van Horn, Topeka, secretary. The five members of the executive committee were then elected as follows: The governor, state superintendent of public instruction, state labor commissioner, Dr. D. M. Fisk, Topeka, representing private educational institutions, and L. M. Penwell, Topeka, representing the United Commercial Travelers, which, together with the president and secretary *ex officio*, constitute the executive committee of the board of directors.

Thus was launched the Kansas campaign for the study and prevention of tuberculosis, which it is confidently hoped may result in great good and increasing usefulness to the present generation and those that are to follow in the years to come.

Public Sentiment Regarding Tuberculosis.

Recent legislation regarding tuberculosis in various communities of the United States indicates the growth of public sentiment. Not only is it the spectacle of a waking people, but also of progressive stages of understanding the tuberculosis problem. In Utah, for example, we find the Board of Regents of the University ruling that no person having tuberculosis shall be admitted in any capacity, whether as student, instructor, or employee, to classroom or any university building. Such a ruling is of doubtful wisdom. One reassuring gospel which the crusade against tuberculosis brings is the personal freedom of the sufferer *if he observes the necessary precautions against the spread of the disease*. We believe that it defeats the very purpose of the anti-tuberculosis movement to discriminate against the tuberculous as a class. The true educational and coöperative spirit is to recognize the good it does to observe precautionary measures by admitting those who do observe them to the full privileges of ordinary citizenship. To debar the ignorant and careless is necessary; to admit the intelligent and conscientious is right and fair, and in accord with what we are trying to teach.

It is, however, an entirely different situation in the primary and secondary schools, since school children are known to be the most susceptible of all humankind to tuberculosis. In recognition of this fact we find the Kansas State Board of Health on the defensive in behalf of school children, recommending that boards of education and those who engage teachers shall make careful inquiry as to the health of teachers and all applicants for teaching, with a view to early detection and control of tuberculosis. The unity of purpose between the Kansas State Board of Health and the state superintendent of public instruction has given this recommendation the force of a ruling, the state superintendent having instructed all local superintendents to comply literally with the board's recommendation. This action by the Kansas authorities may well be emulated in Michigan. For the tuberculous school-teacher's sake, confinement in the school is not to be thought of. Be she as intelligent and conscientious as may be in the exercise of precautions against the spread of tuberculosis, she should not be allowed to choose for herself a fatal occupation. The tuberculous teacher is an unsafe associate for children. The frequent proximity

ty of a child to the teacher necessary in the work of instruction, explanation or persuasion; the poor ventilation so common to our schoolrooms affording quick contamination of the air which the children must breathe; just the natural human frailty whereby it is well-nigh impossible for even a high-minded and well-informed teacher to live up to self-imposed discipline and rigid observance of every precaution necessary; these make the practice of engaging teachers who have tuberculosis, or who have not good health, a source of peril to our school children. School age is the age of greatest susceptibility to tuberculosis, and it is imperative that no risk of exposure to that disease be permitted in the schoolroom.

The Michigan State Board of Health passed a resolution in 1890, stating the danger to school children of the presence of a case of consumption in the schoolroom, and recommending the exclusion of such a case from the schoolroom; and it is the belief of this board that support of this resolution by boards of education throughout this State is one of the most important steps to be taken in the crusade against tuberculosis.

Ohio legislation for the cure and relief of tuberculosis is very progressive. Not only is the state sanatorium in that state assured, but provision also is made for county hospitals for the tuberculous. While ostensibly established for the extremely poor, and for indigent cases of tuberculosis, the statute does not exclude other tuberculous persons from the county hospital; and because institutional treatment of tuberculosis is to be preferred over home treatment, both on account of the sufferer and the public, persons attending the county hospital are not classed as paupers. Undoubtedly this provision will lead to the commitment of all consumptives to these hospitals who have no place where they can be cared for in a way that will insure their own relief and the safeguarding of the public.

But the pattern of tuberculosis legislation is found in the new law of New York state. It anticipates all of the social and scientific needs in the prevention of this disease. In this statute, the dangerous and communicable nature of tuberculosis is declared. Attending physicians, and chief officers of all tuberculosis institutions are required to report all persons known to have tuberculosis. Such records are not made public. Local health authorities are required to provide for free examination of all sputum upon request of any physician. All premises vacated by a tuberculosis person must be disinfected before reoccupation. The method of disinfection is the responsibility of the local health officer, but the expense is that of the owner of the premises. Failure to do this

gives the health officer cause to post a suitable placard preventing the reoccupation of the premises. Improper disposal of the sputum of a tuberculous person is a misdemeanor. The duty of instructing a tuberculous person in preventive measures may be relegated by the health officer to the attending physician, the latter receiving compensation therefor. Recovery from tuberculosis must be reported. Penalties are attached for violations of this statute. There has probably been no more intelligent and effective legislation toward the preservation of the public health than this New York statute. May it receive the careful consideration of every lawmaker in our country.—*Public Health.*

United States vs. Heim Brewing Company.

On November 4, 1908, the chief food and drug inspector, acting by virtue of his commission as federal inspector, secured seven original unopened barrels of beer manufactured and bottled by the Heim Brewing Company, of Kansas City, Mo., and shipped to Newton, Kan. Each of these barrels bore a label on the head reading "Crookery," with the name and address of the consignee; to the bottles was attached a label which read as follows: "Hop-on. A mild beer, containing 1.82 per cent. alcohol. Heim Brewery. Branch of the Kansas City Breweries Co. Guaranteed to comply with the Pure Food and Drugs Act, June 30, 1906, and Kansas Pure Food Law." Upon analysis, the contents of the bottles were found to contain ordinary beer, with an alcoholic content of 4.62 per cent. by volume. It was evident, therefore, that the United States food and drugs law had been violated; whereupon, a notice of hearing was sent to the Heim Brewing Company, giving them opportunity to present evidence to show that the above facts did not constitute misbranding under the law. Information as above was then filed in the United States district court, at Topeka, and on December 17 the defendant plead guilty as charged. Judge Pollock imposed a fine of \$100 and costs. The day is past when beer may be shipped into this state as "crookery," or jug whisky as "molasses." The label must tell the truth, both as to the nature or kind of product and the alcoholic content.

The Kansas and national food and drugs laws seem to make it necessary to mix a little morals with business.

The Fence or the Ambulance.

"'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke and full many a peasant.
So the people said something would have to be done,
But their projects did not at all tally;
Some said, 'Put a fence round the edge of the cliff';
Some, 'An ambulance down in the valley.'

"But the cry for the ambulance carried the day.
For it spread through the neighboring city;
A fence may be useful or not, it is true,
But each heart was brimful of pity
For those who slipped over that dangerous cliff;
And the dwellers in highway and valley
Gave pound or gave pence, not to put up a fence,
But an ambulance down in the valley.

"'For a cliff is all right if you're careful,' they said,
'And if folks ever slip or are dropping,
It isn't the slipping that hurts them so much
As the shock down below when they're stopping.'
Then an old sage remarked, 'It's a marvel to me
That people give far more attention
To repairing results than to stopping the cause,
When they'd much better aim at prevention.'

"'Let us stop at its source all this mischief,' cried he,
'Come, neighbors and friends, let us rally;
If the cliff we will fence we might almost dispense
With the ambulance down in the valley.'
'Oh, he's a fanatic,' the others rejoined.
'Dispense with the ambulance? never!
He'd dispense with all charities, too, if he could;
But no! We'll protect them forever;
Aren't we picking up folks just as fast as they fall?
And shall this man dictate to us? Shall he?'
Why should people of sense stop to put up a fence
While their ambulance works in the valley?

"But a sensible few who are practical too,
Will not bear with such nonsense much longer;
They believe that prevention is better than cure
And their party will soon be the stronger.
Encourage them, then, with your purse, voice and pen,
And (while other philanthropists dally)
They will scorn all pretense and put up a stout fence
On the cliff that hangs over the valley."

This is an appeal to you to join the Kansas Association for
The Study and Prevention of Tuberculosis. Your name and
address with \$1 will help build the fence.

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